THERMAL HEART

The latest innovation in commercial aluminium joinery

THERMALLY BROKEN COMMERCIAL FRAMING

Specifier support

WE ARE HERE TO HELP, EVERY STEP OF THE WAY

At AWS, we are so committed to providing support to architects and specifiers, we've decided to take this whole page to tell you about it.

The road to creating a specification can be varied, and resources and approaches differ. That's why we offer you a variety of technical tools to make specifying AWS systems easy, including CAD and 3D files, extensive technical literature and an experienced team of window systems experts.

We are intent on supporting industry professionals and contributing to knowledge and awareness around high-performance window and door systems.

We take pride in the relationships we have formed with both the Australian Institute of Architects, and the Building Designers Association of Australia.

Our technical team is always happy to help.

Just email techsupport@awsaustralia.com.au for all the support you need.

Photos used in this brochure are courtesy of DLG Aluminium and Glazing, Hanlon Windows Australia and AVS Windows and Doors

> CONTENTS

It's what's inside that counts

THERMALHEART™

ThermalHEART™ is the technology that lies at the core of a new thermally-efficient range of commercial aluminium framing systems

New government requirements on energy efficiency in commercial buildings make choosing the right building products essential. If you want to minimise cold and heat transfer whilst maximising efficiency and comfort, our ThermalHEART™ framing systems are the perfect solution.

ThermalHEART™ is the technology that lies at the core of a new thermally-efficient range of commercial aluminium framing systems developed by AWS. In fact, the ThermalHEART™ Commercial range is 51% more thermally efficient than standard aluminium commercial framing.

> THERMAL BREAK TECHNOLOGY

ThermalHEART™ products include a polyamide insulator, or thermal break, between the aluminium exterior and interior. This break minimises the transfer of heat and cold through the aluminium frame, giving the window excellent insulation properties.

> ARCHITECTS' CONVENIENCE

When it comes to large areas of glazing, the extra insulation provided by ThermalHEART™ technology gives you additional flexibility with regard to Building Code compliance.

> A VERSATILE RANGE

The comprehensive AWS Commercial ThermalHEART™ range includes CentreGLAZE™ and FrontGLAZE™ framing in 100mm and 150mm platforms, along with a compatible door system for hinged, pivot or sliding installations. We can also fit awning sashes into most of these systems. Awning sashes will also accept IGUs up to 24mm.

> EFFICIENCY AND COMFORT

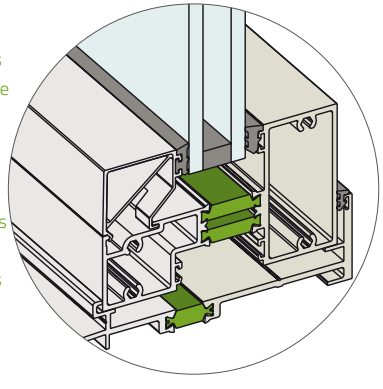
When combined with double glazing, AWS Commercial ThermalHEART™ framing systems meet contemporary aspirations for energy conservation and comfortable interior temperatures.

> DUAL COLOUR OPTION

The unique ThermalHEART™ joining method allows for one finish on the outside and one on the inside, to complement both internal and external palettes.

The thermal break in ThermalHEART™ extrusions is created using a polyamide strip.

Polyamide is an excellent thermal insulator. It has very similar expansion rates to aluminium, ensuring ThermalHEART™ extrusions maintain excellent structural integrity.



Give your projects the green light

THERMALHEART™ AND THE ENVIRONMENT

ThermalHEART™ window systems can significantly reduce the requirements for artificial heating or cooling in commercial buildings

Commercial office and residential buildings account for approximately 23% of Australia's greenhouse gas emissions.* ThermalHEART™ systems can substantially improve the thermal performance of a building envelope, and reduce the need for ongoing energy use to maintain interior comfort levels.

*"The Dollars and Sense of Green Buildings 2006: Building the business case for commercial green buildings in Australia". Green Building Council of Australia, 2006

> THERMALHEART™ AND THE ENVIRONMENT

ThermalHEART™ extrusions are composed of two aluminium profiles and one or more polyamide insulating strips.

Bauxite, the ore of aluminium, is an abundant component of the earth's crust. The smelting of aluminum and the extruding of aluminum profiles require large amounts of electricity, and this gives aluminium windows a high 'embodied energy'. In addition, studies have indicated that aluminium and timber windows typically last for more than 40 years, while PVC only has an optimum life of 25 years.

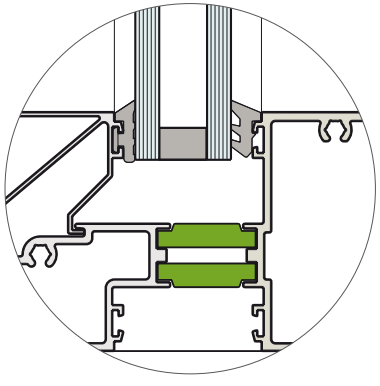
Aluminium can be recycled indefinitely. Recycled aluminium accounts for one-third of global consumption. Even more encouraging, there is considerable scope for the recycled content of global production to be increased.

Aluminium windows are uniquely strong, lightweight, ductile and corrosion-resistant. Aluminum is also an excellent conductor of heat. By thermally breaking an aluminium window frame we can maintain the properties that make aluminium indispensable to the commercial building industry. Added insulation attributes also overcome issues associated with high conductivity, i.e. unwanted heat gain and loss to the building envelope.

The inclusion of a polyamide strip substantially improves the thermal performance of the window system. Used in conjunction with double glazing, ThermalHEART™ window systems can significantly reduce the requirements for artificial heating or cooling in commercial buildings, thus lowering a building's long-term energy requirements.

ThermalHEART™ systems are designed, tested and manufactured by Australia's largest and most geographically dispersed network of independent window makers. This reduces the environmental burden associated with importing and transporting similar systems from the USA, Asia and Europe.

We believe that aluminium windows and doors, particularly those which incorporate ThermalHEART™ technology, offer an excellent sustainability solution.



ThermalHEART™ systems use double glazing as standard and provide an excellent solution to demands for energy conservation and comfortable interior temperatures.

Window Energy Rating Scheme (WERS) data shows that ThermalHEART™ systems deliver U-Values as low as 1.9

WERS is the Window Energy Rating Scheme for windows and doors in Australia. The rating of a window is based on its U-Value and Solar Heat Gain Coefficient (SHGC).

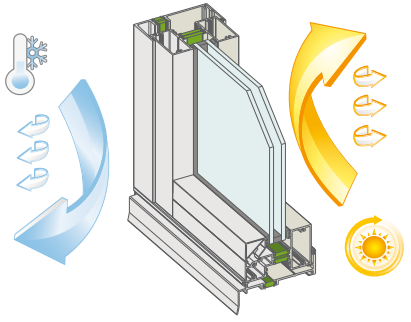
ThermalHEART™ systems use advanced thermal modelling techniques during the design phase to ensure the best possible outcome and achieve very favourable WERS ratings.

> U-VALUE

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

The illustration right demonstrates how the insulation properties of ThermalHEART™ systems, combined with appropriate glass selection, improve the U-Value and window performance in a cold climate. The principles would operate in reverse in a warm climate.

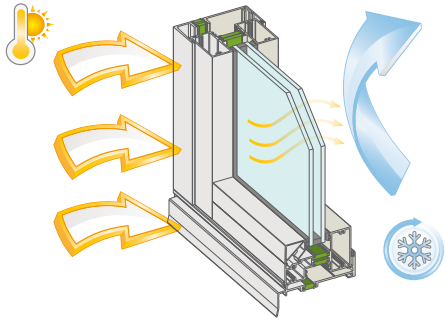
ThermalHEART™ systems provide excellent insulation minimising the transfer of heat or cold between the internal and external environment.



THERMALHEART™ SYSTEMS – U-VALUE

> SOLAR HEAT GAIN COEFFICIENT

SHGC is a measure of how much solar radiation passes through a window. ThermalHEART™ systems drastically reduce solar heat gain through the window frame. Varying levels of solar radiation will still pass through the glass, offering passive solar heating. Appropriate glass selection will ensure the optimum performance of ThermalHEART™ windows based on climate zone.



THERMALHEART™ SYSTEMS – SHGC

> WERS RATINGS

The tables shown right are extracts from the AWS product listings on the WERS certified products database. They illustrate the significant performance gains achieved by ThermalHEART™ systems.

The first table shows WERS data for a typical non-thermally broken CentreGLAZE™ commercial framing system with a common monolithic glass type - this glass and frame combination achieves a U-Value of 3.9

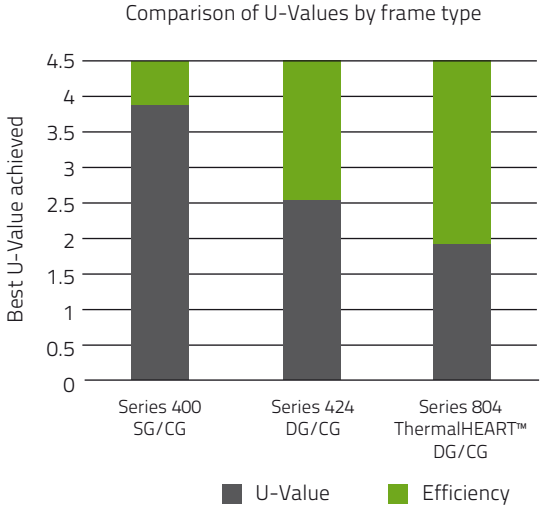
The second table shows WERS data for a typical non-thermally broken CentreGLAZE™ double glazed commercial framing system with a variety of glass combinations - this system achieves a U-Value of 2.5.

The third table shows WERS data for a ThermalHEART™ CentreGLAZE™ system using the same glass alternatives as demonstrated in the previous table. This system achieves a U-Value of 1.9.

SERIES 400 CENTREGLAZE™ FRAMING – NON-THERMALLY BROKEN SG				
Window ID	Glass Type	Uw	SHGCw	Tvw
AWS-027-02	6SnClr	4.34	0.54	0.62
AWS-027-12	6.38CPClr	3.9	0.62	0.64

SERIES 424 CENTREGLAZE™ FRAMING – NON-THERMALLY BROKEN DG				
Window ID	Glass Type	Uw	SHGCw	Tvw
AWS-028-10	6.38CPClr/12Ar/6	2.5	0.54	0.64
AWS-028-14	6.38CPGy/12Ar/6	2.5	0.37	0.31
AWS-028-26	6EVanGy/12Ar/6	2.6	0.30	0.25
AWS-028-18	6.38SnGy/12Ar/6	2.7	0.44	0.53
AWS-028-09	6.38CPClr/12/6	2.7	0.54	0.64
AWS-028-13	6.38CPGy/12/6	2.7	0.54	0.64

SERIES 804 THERMALHEART™ CENTREGLAZE™ FRAMING DG				
Window ID	Glass Type	Uw	SHGCw	Tvw
AWS-054-06	6.38CPClr/12Ar/6	1.9	0.51	0.62
AWS-054-04	6.38CPGy/12Ar/6	1.9	0.35	0.29
AWS-054-17	6EVGy/12Ar/6	2.0	0.28	0.25
AWS-054-15	6.38SnGy/12Ar/6	2.1	0.29	0.24
AWS-054-05	6.38CPClr/12/6	2.1	0.51	0.62
AWS-054-03	6.38CPGy/12/6	2.1	0.36	0.29



When compared with non-thermally broken single glazed CentreGLAZE™ framing, ThermalHEART™ systems deliver a performance improvement in the range of 51%.

When compared with non-thermally broken double glazed CentreGLAZE™ framing, ThermalHEART™ systems deliver a performance improvement in the range of 24%.

Computer-simulated thermal modelling: performance insight to guide design

Computer-simulated thermal modelling enables our design team to understand the thermal performance and energy efficiency of ThermalHEART™ window systems during the design phase.

Thermal modelling simulations allow subtle adjustments and improvements to be made during the design phase, to maximise performance outcomes.

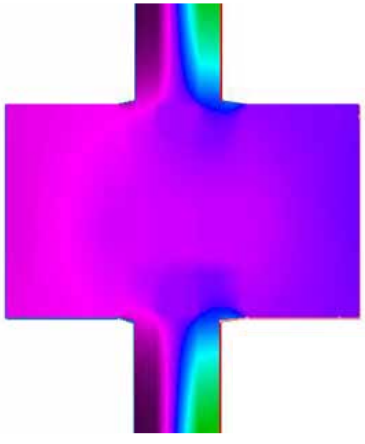
Thermal modelling uses colour to show the transmission of heat. The colour legend above shows the relative temperature associated with the colours portrayed on the thermal models. Pink indicates a temperature of approximately -15.7°C. Blue indicates a temperature of approximately -6°C and green indicates a temperature of approximately 5-7°C

> NON-THERMALLY BROKEN COMMERCIAL FRAME

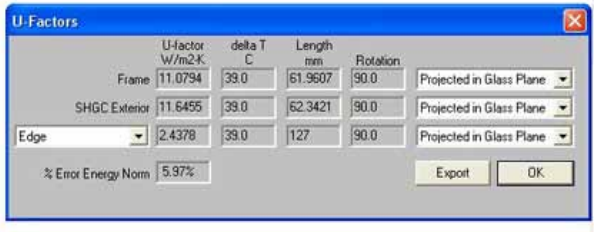
The illustration below shows thermal modeling outcomes for a non-thermally broken CentreGLAZE™ frame with 24mm IGU. The purple colour indicates a temperature of approximately -15.7°C on the external element of the frame. This colour transitions through the frame with the internal element of the frame showing a temperature in the range of -9°C.

This model shows a significant transfer of heat between the internal and external frame elements. In this instance, the frame provides less insulation against a cold outside temperature than it would if a thermal break were incorproated.

-15.7°C



-9°C



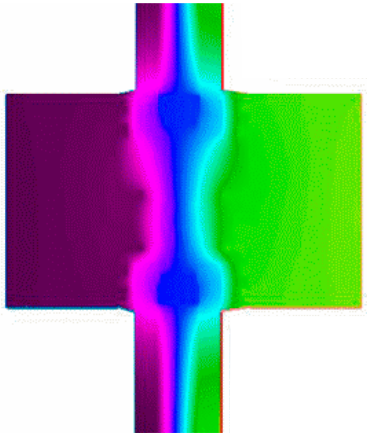
> THERMALHEART™ COMMERCIAL FRAME

The illustration below shows thermal modeling outcomes for a ThermalHEART™ CentreGLAZE™ frame with a 24mm IGU. The purple colour indicates a temperature of approximately -15.7°C on the external element of the frame.

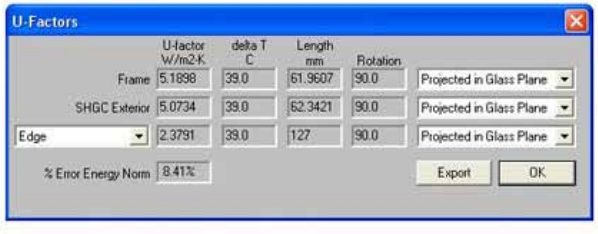
You can clearly see the polyamide thermal break in the extrusion, highlighted blue. The thermal break maintains the seperation achieved through the double glazing unit and insulates the internal elements of the frame from the cold external temperature. The internal element shown in green indicates a temperature of approximately 9°C.

This model shows a significant reduction in the transfer of heat between the internal and external frame elements. In this instance, the frame performs well as an insulator against a cold outside temperature and would assist in maintaining comfortable internal climate levels and reducing loads on artifcal heating or cooling within the building envelope.

-15.7° C



9° C



The rules have changed

AND SO HAVE OUR SYSTEMS

Got a Section J migraine? Here's your pain relief

Over the past five years, government requirements on energy efficiency in commercial buildings have become ever more stringent. For a long time, commercial window systems have been found lacking in this area. ThermalHEART™ changes this, delivering to the Australian market an immediate solution to Section J headaches.

Kinghorn Motors in Nowra used ThermalHEART™ systems to achieve compliance to demanding Section J requirements.

Project completed by Hanlon Windows Australia.

> THERMALHEART™ A SOLUTION TO SECTION J

The Building Code of Australia, Section J Part 2, sets out requirements for minimum energy efficiency provisions in multi-residential and commercial buildings. As government focus shifts to energy efficiency, these provisions are becoming more and more demanding.

Using the elemental Deemed-to-Satisfy method, the Section J Glazing Calculator sets out the minimum requirements for U-values and Solar Heat Gain Coefficients (SHGC), based on climate zone, building size, glass to facade ratio and orientation.

The inclusion of a thermal break ensures ThermalHEART™ systems typically meet or exceed the U-Values and SHGCs set out in Section J. In general, this means you can use large expanses of glazing – even in extreme climate zones – and still achieve a pass.

> KINGHORN MOTORS CASE STUDY

When Kinghorn Motors VW decided to upgrade their Nowra showroom, the project almost didn't make it past planning. A less-than-perfect aspect, facing the highway and eastern sun meant Section J required extremely low U and SHGC values. Values unable to be achieved with standard single glazed commercial aluminium systems.

If not for ThermalHEART™ framing, compliance issues would have forced designers to alter the design and significantly reduce glazing throughout the building.

GLAZING ELEMENTS, ORIENTATION, SIZE & PERFORMANCE CHARACTERISTICS										
Glazing element		Sector Faced	Size		Section J Requirement		Performance Standard Aluminium		Performance Thermal HEART™	
	ID		H	W	u	SHGC	U	SHGC	U	SHGC
1	W7	N	4.50	5.50	3.9	0.47	3.87	0.62	3.1	0.23
2	W6	N	0.90	5.60	3.9	0.47	3.87	0.62	3.1	0.23
3	W9,W8	E	4.50	10.40	3.1	0.23	3.87	0.62	3.1	0.23
4	D1	E	2.40	1.80	3.1	0.23	3.87	0.62	3.1	0.23
5	W1	W	0.90	0.90	3.9	0.47	3.87	0.62	3.1	0.23
6	W2,W3,W4	W	1.80	2.70	3.9	0.47	3.87	0.62	3.1	0.23
7	W5	W	0.90	12.00	3.9	0.47	3.87	0.62	3.1	0.23
8	W10	S	4.50	5.50	3.9	0.47	3.87	0.62	3.1	0.23
9	D2	S	2.40	2.70	3.9	0.47	3.87	0.62	3.1	0.23
10	W11	S	0.90	3.80	3.9	0.47	3.87	0.62	3.1	0.23

This table illustrates the U-Value and SHGC figures achieved using standard aluminium framing versus ThermalHEART™ framing.

Design the way you've always wanted

EFFICIENCY & COMFORT WITHOUT COMPROMISE

Don’t let standards strangle your creativity

Architects and designers face continually tightening energy provisions when it comes to designing commercial buildings. The challenge is to create beautiful, functional spaces while achieving compliance. ThermalHEART™ systems enable you to do just that.

> BIG WINDOWS ARE BACK

Windows bring so much to our buildings: natural light, connection with the outdoors, ventilation and a sense of space. ThermalHEART™ systems ensure windows can continue to play an important role in energy-efficient commercial buildings.

Often a site will have a less-than-perfect orientation. Alternatively, clients may want large expanses of glazing facing a spectacular view or prominent street frontage. In many cases, a lack of thermally efficient window systems has forced architects and designers to alter designs, and reduce or eliminate windows, just to meet the energy provisions. ThermalHEART™ is the answer.

> CLEAN BOLD LINES

ThermalHEART™ systems are designed to deliver a clean, bold aesthetic. To ensure a simple, unobtrusive style, frames are free of grooves or ridges, hardware has been carefully thought out and ingeniously fitted, and minimal radii have been applied to profiles.

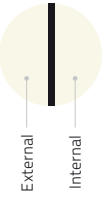
> DUAL FINISH TECHNOLOGY

To achieve excellent thermal performance, ThermalHEART™ systems incorporate an innovative polyamide insulator strip which separates the internal and external elements of the extrusion.

The way the thermal insulator is joined allows for a different choice of finish, to complement both internal and external finish palettes. The result? One finish on the outside, another on the inside, and unprecedented colour flexibility.

Architects and designers can now select the strong, bold, dark colours which feature prominently on commercial building exteriors, and opt for lighter, more neutral tones on the building’s interior.

SINGLE FINISH
The same finish appears on the internal and external extrusion surfaces. Select any finish from the primary ThermalHEART™ finish card.



DUAL FINISH
A different finish appears on the internal and external extrusion surfaces.

External: select any finish from the primary ThermalHEART™ finish card.

Internal: select from the Internal Finish Palette .

The architecture of happiness

CREATE BEAUTIFUL, COMFORTABLE SPACES WITH THERMALHEART™

Don’t lose sight of the ultimate aim: comfort

Comfort is closely tied to the concept of happiness. Our sensory responses to elements like temperature and light let us know if we are comfortable, and this affects our happiness.

ThermalHEART™ systems help to maintain optimum internal temperatures in commercial buildings, and reduce the need for artificial heating or cooling.

The ability to incorporate large expanses of glazing with minimal negative impact on efficiency ensures architects have the flexibility to maximise the use of natural light, enhance the connection to the outdoors, and allow building occupants to be aware of the passage of time – all, important elements in achieving happiness.

> COLD CLIMATE

To ensure comfort, buildings in cold climates typically need to be heated. ThermalHEART™ window systems can:

1. drastically reduce the outside cold from entering the building, making buildings warmer.
2. help keep the warm air in, reducing heating costs.
3. eliminate condensation, which often occurs due to the difference in temperature between the interior and exterior environments.

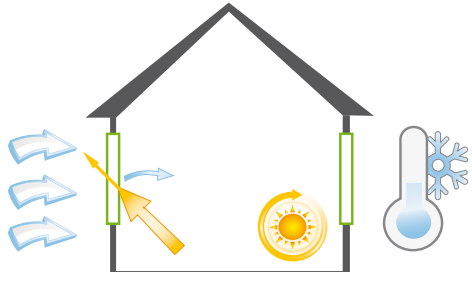
> WARM CLIMATE

In a warm climate, ThermalHEART™ systems:

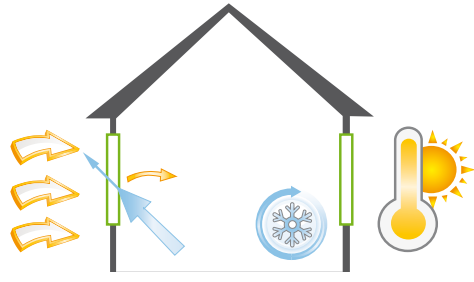
1. act as a buffer against the hot air outside, minimising the transfer of heat into a building.
2. help to minimise the loss of cool air from artificial cooling units, reducing the need for cooling and lowering energy consumption.

> SICK BUILDING SYNDROME (SBS)

SBS is an emerging problem in commercial buildings. ThermalHEART™ systems inhibit condensation from forming on the inside of the window frame. By reducing stagnant moisture you alleviate mould formation, and in turn, the respiratory illnesses that follow.



THERMALHEART™ SYSTEMS – COLD CLIMATE



THERMALHEART™ SYSTEMS – WARM CLIMATE

Understanding our ThermalHEART™ systems

INFORMATION TO HELP YOU TO MAKE AN INFORMED DECISION

Australian-designed and manufactured, fully tested window and door systems

AWS is committed to offering Australian-designed and manufactured, fully tested window and door systems. By constantly evolving, AWS has maintained an unsurpassed reputation for design and performance excellence.

ThermalHEART™ technology has been integrated into a selection of Vantage and AWS Commercial systems to deliver a high-performance range of window and door systems for both commercial and residential applications. The ThermalHEART™ range represents dedication to precision, flexibility in design and unrivalled performance.

> UNRIVALLED SERVICE

ThermalHEART™ window systems are proudly designed and extruded in Australia by Architectural Window Systems (AWS). In addition to developing some of the most innovative aluminium joinery products in Australia, AWS technical services staff maintain an unrivalled level of support to fabricators in the window industry.

> DESIGN AND INNOVATION

AWS designs all ThermalHEART™ window and door systems locally, for Australian conditions. AWS maintains a constant drive to refine, improve and modernise its aluminium profiles, and to enhance good looks, performance and manufacturability. This dedication has won AWS a loyal and growing following among architects, builders, home-owners and specifiers.

> RESEARCH AND DEVELOPMENT

The AWS window and door testing laboratory is fully NATA accredited, and ensures that ThermalHEART™ systems comply with building codes and relevant industry standards. With one of the largest pressure booths in the industry, weather conditions can be simulated and remote monitoring of air leakage and deflection of windows and doors is also possible.

> WORLD-LEADING TECHNOLOGY

We use world-leading technology to ensure that our new AWS Commercial ThermalHEART™ range of windows and doors has the strength to perform in the toughest environments.

A state-of-the-art thermal break machine from Belgium's Aluro company inserts the polyamide nylon strip, and rolls the three components – aluminium interior, exterior and thermal strip – tightly together into one rigid profile.

Commercial ThermalHEART™ systems

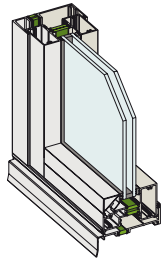
COMMERCIAL | THERMALHEART™

Innovative commercial systems

AWS Commercial with ThermalHEART™ technology is a state-of-the-art, thermally broken commercial system that delivers drastically improved thermal performance. These market-leading systems have been designed and tested to deliver exceptional performance for the Australian commercial building sector, and to help architects and designers meet increasingly stringent energy requirements.

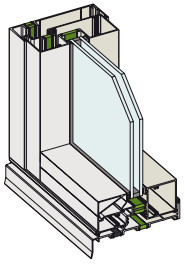
SERIES 804
THERMALLY BROKEN CENTREGLAZE™ FRAMING (100MM)

Series 804 CentreGLAZE™ shopfront frames with ThermalHEART™ technology measure 100mm x 60mm and are specifically designed to accept 24mm Insulating Glass Units (IGUs). Series 804 has a wide range of thermally broken sub-frames to cover most installations. This includes sub-sills with integrated nailing fin – ideal for residential installations.



SERIES 806
THERMALLY BROKEN CENTREGLAZE™ FRAMING (150MM)

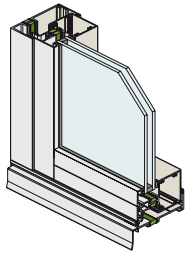
Series 806 CentreGLAZE™ shopfront frames with ThermalHEART™ technology measure 150mm x 60mm and are specifically designed to accept 24mm Insulating Glass Units (IGUs). Series 806 has a wide range of thermally broken sub-frames to cover most installations.



To access product specification sheets, specifier manuals, WERS data and CAD files, simply visit www.thermalheart.com.au

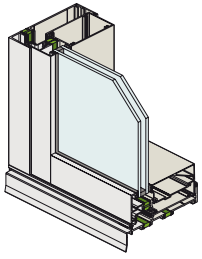
SERIES 824
THERMALLY BROKEN FRONTGLAZE™ FRAMING (100MM)

Series 824 FrontGLAZE™ shopfront frames with ThermalHEART™ technology measure 100mm x 60mm and are specifically designed to accept 24mm Insulating Glass Units (IGUs) with glass positioned close to the front of the frame. Series 824 can be supplied with external or internal glazing, and has a wide range of thermally broken sub-frames. This includes sub-sills with integrated nailing fin – ideal for residential installations.



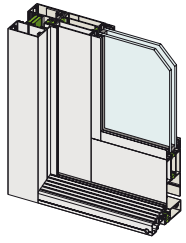
SERIES 826
THERMALLY BROKEN FRONTGLAZE™ FRAMING (150MM)

Series 826 FrontGLAZE™ shopfront frames with ThermalHEART™ technology measure 150mm x 60mm and are specifically designed to accept 24mm Insulating Glass Units (IGUs) with glass positioned close to the front of the frame. Series 806 can be supplied with external or internal glazing, and has a wide range of thermally broken sub-frames to cover most installations.



SERIES 852
THERMALLY BROKEN COMMERCIAL DOOR

Series 852 thermally broken doors are compatible with the full range of ThermalHEART™ AWS Commercial systems. Available as hinged, pivot and sliding panels. Dedicated hardware and a variety of sills have been developed for this system to maintain efficiency and minimise air infiltration. Screen doors can be fitted to Series 852 doors when fitted into Series 806 or 826 (150mm) frames.



Residential ThermalHEART™ systems

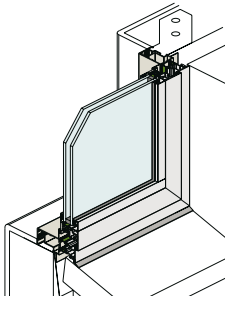
DESIGNER SERIES | THERMALHEART™

High performance residential systems

Designer Series ThermalHEART™ window and door systems were developed in response to growing environmental concerns and the need for energy-efficient residential building designs. Designer Series ThermalHeart™ systems offer significantly improved thermal performance and energy efficiency. This innovative range is 32% more thermally efficient than standard double glazed windows and doors. It is ideal for applications where minimising cold and heat transfer is a priority.

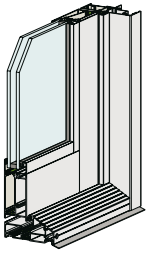
SERIES 726
THERMALLY BROKEN AWNING/CASEMENT WINDOW

The Series 726 system uses a 100mm frame, mullion and transom with 2mm internal radius. Square external glazing beads are standard. The extra strong sash allows large sash windows to be fabricated for high wind load areas. The system has been tested for compliance with the relevant Australian standards, achieving very high water resistance of 600Pa and low air infiltration.



SERIES 729
THERMALLY BROKEN HINGED DOOR

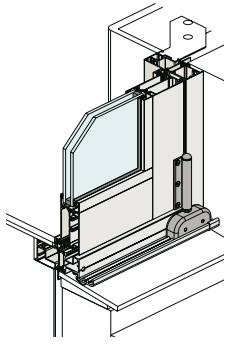
The Series 729 system uses a 100mm frame, mullion and transom with 2mm internal radius. Square external glazing beads are standard. The doors have been tested for compliance with the relevant Australian standards. They achieved a high water resistance of 380Pa for external swing doors, and 150Pa water resistance for internal opening doors. This makes the product suitable for most residential applications.



To access product specification sheets, specifier manuals, WERS data and CAD files, simply visit www.thermalheart.com.au

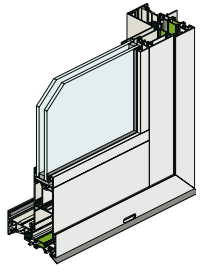
SERIES 730
THERMALLY BROKEN BI-FOLD DOOR

The Series 730 system utilises a 100mm frame. Square external glazing beads are standard. The extra-strong door stiles allow oversize door panels to be fabricated. This bi-fold door has been tested for compliance with the relevant Australian standards and achieved a high water-resistance of 380Pa. The product is suitable for most residential applications.



SERIES 731
THERMALLY BROKEN SLIDING DOOR

Inspired by commercial stacking door systems, the Series 731 Thermally Broken Sliding door incorporates commercial design features within a platform purposefully designed for residential applications. The Series 731 is a bold and unique system with up to four sliding panels in each direction. It can be paired with the Centor™ roll-away S1 screening system.



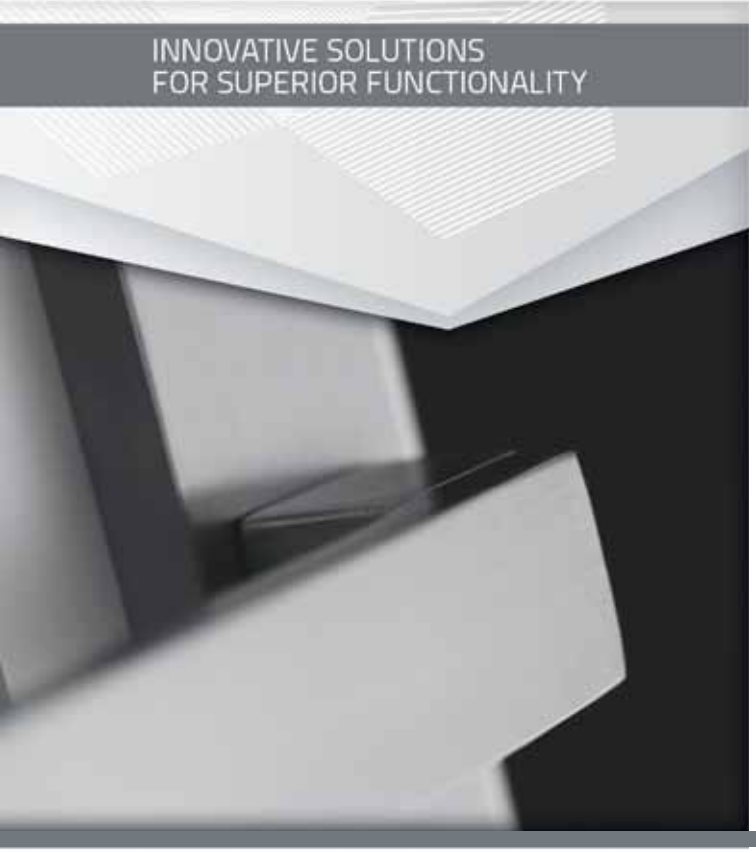
Although our Designer Series ThermalHEART™ range was developed for use in residential installations, these systems are often suitable as complementary products to ThermalHEART™ commercial framing and may be suitable for use in commercial applications.

Ultimately it is always important to select a window system that is fit for purpose. Consult the Vantage Specifier Guide or visit the ThermalHEART™ website to access performance tables and span charts for Designer Series ThermalHEART™ systems, so you can make an informed decision about your window systems.

Cimitiere House, shown above, utilises Designer Series ThermalHEART™ systems throughout and was Tasmania's first 5 Green Star Rated project.

Project completed by Glass Supplies.

Hardware solutions for ThermalHEART™



Intelligent hardware for an intelligent system

One of the defining elements of Commercial joinery is hardware. At AWS we believe that the intelligent selection and integration of hardware into our systems is one of the features which sets our commercial joinery apart.

Consideration into hardware selection and installation becomes even more critical where thermally broken frames are concerned. Hardware must be robust, conform to industry standards and maintain the integrity of the thermal break when installed.

> INDUSTRY STANDARD HARDWARE

ThermalHEART™ systems accept industry standard hardware items. A unique mounting bracket has been developed to ensure industry standard hardware can be properly mounted to ThermalHEART™ commercial systems without compromising the thermal break and ensuring the integrity and strength of the frame and hardware mechanism.

> STRONG MOUNTING POINTS

Consideration has been given to hardware mounting points throughout the design of Commercial ThermalHEART™ systems. Items such as hinges, COC closers and lock mechanisms fix into rigid mounting platforms to ensure a strong and durable installation.

> SPIGOTTED JOINERY

To ensure that Commercial ThermalHEART™ systems will withstand the demanding requirements of commercial applications, frames are joined with thermally broken spigots to ensure strength and integrity of the system.

ICON™ Hardware and lever compression locking

> ICON™ HARDWARE

The ICON™ hardware range is a fully integrated range of 316-grade stainless steel hardware for aluminium windows and doors. The range offers superior weathering performance and outstanding durability, making it suitable for a range of commercial applications and environments.

Developed for use with our high performance window and door systems, ICON™ incorporates a square-edge, angular look which complements the lines of ThermalHEART™ systems.

The ICON™ range incorporates:

- Recessed sliding door pull handle
- Large sliding door pull handle
- Hinged door lever set
- Bi-fold door actuator
- Casement latch.

> LEVER COMPRESSION LOCKING

Lever compression locking is an innovative mechanism which ensures optimum seal compression is generated around the perimeter of a door. The system is ideal for use on ThermalHEART™ systems and works to minimise air infiltration. The mechanism works by lifting the handle to extend the shootbolts and deadbolt. When deadlocked, the lever compression lock provides four points of locking for increased security.

- Features four points of locking including the latch, deadbolt and shootbolts.
- Upward motion of the handle activates the deadbolt and shootbolts.
- Downward action of the handle deactivates the deadbolts and shootbolts.
- When used with the correct strike the lock generates optimum seal compression to provide improved water and air seal performance whichmaximises energy efficiency especially for large panel doors.
- The handing of the lockset is adjusted by reversing the orientation of the latch bolt.
- lockset can be keyed alike to a variety of industry standard products

icon

Illustrated right an ICON™ lever set used in conjunction with lever compression locking for optimum seal compression. Lifting the lever extends the shoot bolts and deadbolt.

ICON™ is a proprietary hardware range offered by AWS, developed specifically to complement AWS systems.

Colour selection: the choice is yours

Colour your world, with more than 190 choices

Choosing a colour for your window and door systems requires careful thought. All ThermalHEART™ window and door systems are made to order, so you have complete freedom to choose the perfect colour and finish for your project.

> POWDER COATING

Powder coating is a baked-on coating that is tough and durable and comes in a wide range of colours. The Vantage Colour Book contains swatches for our standard range of powder coat colours, and is available from your local AWS Commercial fabricator. When you select a powder coat colour from the AWS Commercial standard colour range, matching window and door hardware is easy and affordable.

> ANODISING

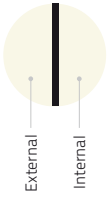
Anodising is an electrochemical treatment available in a range of colours, including finishes of natural silver, bronze and black.

> DUAL FINISH TECHNOLOGY

To achieve excellent thermal performance, ThermalHEART™ systems incorporate an innovative polyamide insulator strip which separates the internal and external elements of the extrusion. The thermal insulator joining method allows you to have one finish on the outside and another on the inside. This brings unprecedented flexibility to your colour selection.

Architects and designers can now select the strong, bold, dark colours which feature prominently on commercial building exteriors, and opt for lighter, more neutral tones inside.

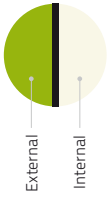
SINGLE FINISH
The same finish appears on the internal and external extrusion surfaces. Select any finish from the primary ThermalHEART™ finish card.



DUAL FINISH
A different finish appears on the internal and external extrusion surfaces.

External: select any finish from the primary ThermalHEART™ finish card.

Internal: select from the Internal Finish Palette only



The standard ThermalHEART™ finish range is selected for popularity and suitability to architectural joinery. Custom finishes are also available upon request.

> PRIMARY THERMALHEART™ FINISHES

If you want the same finish on the internal and external surfaces of your joinery, select any of the finishes below. Where a Dual Finish is preferred, select any of these finishes for the external joinery only.

- Pearl White Gloss 1004
- Surfmist® COLORBOND® Matt 2022
- Rivergum Beige Gloss 2018
- Magnolia Gloss 2012
- Primrose Gloss 1005
- Doeskin Satin 2006
- Sandbank® COLORBOND® Matt 2019
- Stone Beige Matt 1006
- Paperbark® COLORBOND® Matt 2016
- Pottery Satin 2017
- Dune® COLORBOND® Matt 2007
- APO Grey Satin 1001
- Citi® Pearl Matt 3002
- Ultra Silver Pearl Gloss 3006
- Anotec Natural Pearl Matt 1009
- Precious Silver Pearl Kinetic Pearl Satin 3007
- Windspray® COLORBOND® Matt 2024
- Notre Dame Gloss 2014
- Berry Grey Satin 2001
- Dark Grey Matt 2005
- Monument® COLORBOND® Matt 2025
- Woodland Grey® COLORBOND® Matt 1008
- Stormfront Pearl Matt 3004
- Pale Eucalypt® COLORBOND® Matt 2015
- Wilderness® COLORBOND® Matt 2023
- Headland® COLORBOND® Matt 2009
- Charcoal Metallic Gloss 3001
- Custom Black Matt 1002
- Clear Anodised Matt 20µm 9101

> INTERNAL THERMALHEART™ FINISHES

If you would prefer a Dual Finish, select any of these finishes for the internal joinery.

- Pearl White Gloss 1004
- Surfmist® COLORBOND® Matt 2022
- Rivergum Beige Gloss 2018
- Paperbark® COLORBOND® Matt 2016
- Dune® COLORBOND® Matt 2007
- Anotec Natural Pearl Matt 1009

IMPORTANT NOTE: finishes shown on this page are a guide only and are not accurate representations of the actual powder coat or anodised finish. Please refer to the ThermalHEART™ finish card, or request powder coat swatches from your fabricator for colour matching.

Glass selection for ThermalHEART™ systems

MAXIMISE EFFICIENCY AND COMFORT

Glass and frame: a critical marriage

Performance glass can help to overcome site limitations, so views and natural light can still be enjoyed without compromising energy efficiency. You can also combine energy-efficient glass with other options, including glass that reduces noise, provides protection from intruders, and creates shelter from extreme weather.

The performance of ThermalHEART™ combined with the right glass selection is a vital part of the building envelope and ideally should be considered early in the design process. Getting the glass selection right in the design stage can help make a project run more smoothly and allow you to take advantage of the most effective solution.

There are three main areas to consider when thinking about glass selection: natural light, solar heat gain, and thermal conductivity.

> NATURAL LIGHT

One of the advantages ThermalHEART™ brings to commercial buildings is the ability to incorporate large expanses of glazing in building facades while still achieving Section J code compliance.

The right performance glass, combined with ThermalHEART™ systems, allows you to make the most of views and natural light while controlling UV and glare.

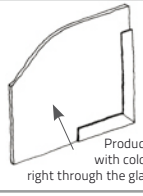
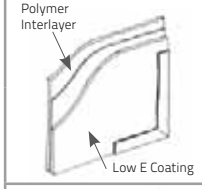
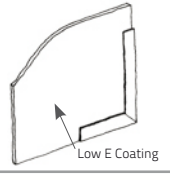
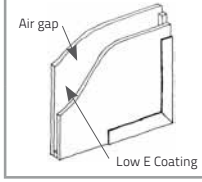
> SOLAR HEAT GAIN

ThermalHEART™ systems minimise heat gain through the window frame. Coupled with the right performance glass buildings are able to harness the natural warmth of the sun during winter, and lessen its impact during summer. Choosing the right performance glass in commercial buildings is critical due to the typically large ratio of glass to floor area.

> THERMAL CONDUCTIVITY

ThermalHEART™ systems insulate the building envelope against heat loss and gain through the window frame. To maximise this effect, our ThermalHEART™ systems accept 24mm Insulated Glass Units (IGUs) as standard. Monolithic glass can also be used in ThermalHEART™ systems. Durable hard coated Low Emissivity (Low E) coatings significantly improve the insulating properties of standard glass.

Compare the performance of some popular glass configurations

	GLASS TYPE	ATTRIBUTES	GLARE REDUCTION	SOLAR HEAT REDUCTION	INSULATION
	Ordinary Glass	▪ 4mm – 6mm			
	Viridian VFloat™ – Toned	▪ 4mm – 6mm ▪ Toned offers up to 32% greater solar heat reduction than ordinary glass ▪ Supertoned offers up to 59% greater solar heat reduction than ordinary glass			
	Viridian VFloat™ – Supertoned				
	Viridian ComfortPlus™ – Clear	▪ 6.38mm Grade A safety glass Up to 39% better insulation than ordinary glass ▪ Green & Grey offers up to 41%, Neutral up to 40% greater solar heat reduc-tion than ordinary glass			
	Viridian ComfortPlus™ – Green / Grey / Neutral				
	Viridian EVantage™ – BlueGreen	▪ Glass thickness 6mm ▪ EVantage offers up to 48% greater solar heat reduction than ordinary glass. This is a reflective LowE product which can be used in an IGU.			
	Viridian EVantage™ – SuperGreen				
	Viridian ThermoTech E™ – Clear	▪ Unit thickness 12mm – 58mm ▪ Up to 68% better insulation than ordinary glass			
	Viridian ThermoTech E™ – Toned & Supertoned				

First step in solar heat reduction for sunny climates

High solar heat reduction for hot climates or demanding orientations, with no improvement in insulation

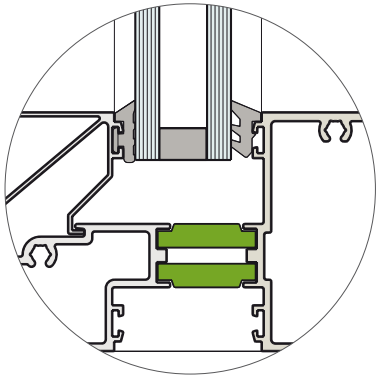
Good insulation with lower solar heat reduction for passive solar heating in cooler climates on northern orientations

High solar heat reduction with good insulation and glare reduction for greater comfort in hot climates or demanding orientations

High solar heat reduction for outstanding comfort in hot climates or demanding orientations

High solar heat reduction and superior insulation for outstanding comfort in hot climates or demanding orientations

ThermalHEART™ systems accept 24mm IGUs as standard. IGUs up to 28mm can be used in commercial framing and doors.



* The performance indicated in the table is that of the highest performing product in that category for that characteristic, performance will differ by product. For detailed glass performance data visit www.viridianglass.com. ™ is a trade mark of CSR Building Products Limited. Reproduced with permission of Viridian. Not all products are appropriate for all applications, and some may require special assessment or processing in certain environments.

A wide range of systems to suit your needs

AWS SYSTEM PORTFOLIO

If ThermalHEART™ is not what you're looking for consider our range of high performance, non-thermally broken systems

For more than 15 years the AWS team has pioneered new advances in aluminium windows and doors. We have significantly and positively impacted on the Australian building landscape as a result of the development of the Vantage and AWS Commercial portfolio of systems

ThermalHEART™ window and door system are one of our proudest achievements to date, but we continue to stand behind our original brands with confidence.

Our range of Vantage Residential window and door systems and AWS Commercial window and door systems demonstrate our commitment to the ongoing development of innovative aluminium joinery products for the Australian market.

VANTAGE ALUMINIUM JOINERY

> VANTAGE RESIDENTIAL SYSTEMS

Australian designed to deliver superior performance for the varied climates and environments around the country, Vantage delivers high performance window systems that offer enormous flexibility in design. Innovative Designer Series systems deliver clean bold profiles, ideal for use in high end residential applications. Whilst Residential Series offers a more tradition style.

AWS COMMERCIAL

> AWS COMMERCIAL SYSTEMS

Commercial window and door systems that offer streamlined and efficient solutions to the commercial construction and high-end residential market. This range includes a wide variety of framing, commercial and architectural products that deliver superior performance, reliability, expansive panel sizes and contemporary architectural styling.

DESIGNER SERIES

Architecturally styled, high performance window and door systems featuring a 102mm frame and bold sash designs ideal for high end residential applications.

RESIDENTIAL SERIES

Systems designed for residential applications with a focus on creating compliant, economical systems to meet the functional requirements of Australian dwellings.

SPECIALTY

The SoundOUT™ range of secondary glazed windows are designed to provide sound reduction and improve the acoustic performance of the building envelope.

COMMERCIAL FRAMING

Innovative framing solutions including CentreGLAZE™, FrontGLAZE™ & FaceLINE™ framing designed to meet the ever-growing needs of the commercial building sector.

COMMERCIAL SERIES

Commercial window and door systems which integrate seamlessly with AWS Commercial framing. Ideal for use in commercial, institutional & light industrial applications.

ARCHITECTURAL SERIES

Strong, bold, stylish profiles for architectural projects. Shapes reflect the designer preference for clean, flush surfaces, continuous sightlines and large panel sizes.

AWS
ARCHITECTURAL WINDOW SYSTEMS

CONTACT TECHSUPPORT@AWSAUSTRALIA.COM.AU
OR FOR MORE INFORMATION VISIT THE WEBSITE

thermalheart.com.au

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