



# Architectural Information

## WERS - Window & Door Energy Ratings Overview

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Date: May 06

Replaces: Aug 03

Scale: Not to scale

We all want to save energy (i.e. money) and the governing bodies around Australia are now starting to legislate in accordance with the Federal Governments commitments.

All new homes now require an energy rating and one of the important areas in a home are the windows and doors. Most home owners will want the features they currently enjoy in living in Australia, large windows and doors that let the outside in, and the serviceability, performance and colour options available with aluminium. But we now need to consider which way the building design we have selected faces in relation to the sun, the type of construction and insulation used, where we position the windows and doors on this building depending on whether we are trying to heat or cool the house/room, shading elements (eaves, awnings etc.) and what glass we need to fit. All of these elements will combine to give an overall building energy rating.



### The Right Product

Differing glass types give significantly different results as illustrated on the following pages. The frame design (slider, awning or door) tends not to have that big an impact. Using plastic or timber windows may give better results in some areas. But like everything there are compromises and these could be performance (weather and strength), colour and hardware options and longevity. We feel that aluminium is currently the best product for the Australia climate where the temperature variations in the major population centres is not as severe as in Europe and America or Northern Australia. But the UV rays produced by the sun in Australia require a powder coated or anodised aluminium frame that can stand up to this type of punishment.

### Most of the Vantage products have been WERS rated.

The priority in a **heating** (hot) climate is to retain heat in the home and maximise the use of 'free' solar energy in winter. Heat transfer takes three forms: radiant heat transfer, conducted heat transfer and heat transfer by infiltration of outside air.

The priority in a **cooling** (cold) climate is to keep unwanted heat out of the home. In order of decreasing importance, unwanted heat gain takes three forms: radiant heat gain, conducted heat gain and infiltration of hot outside air.

### What is a U-value or U-factor?

U-value measures how well a product prevents heat from escaping. It is a measure of the rate of non solar heat loss or gain through a material or assembly. The rate of heat is indicated in the terms of the U-value of a window assembly which includes the effect of the frame, glass, seals and any spacers. The lower the U-value, the greater a window's resistance to heat flow and the better its insulating value.

### What is the difference between R-value and Uw-value?

R-value and Uw-value are essentially two sides of the same coin. R-value is usually cited when discussing things such as wall and ceiling insulation values. The term does not translate well to windows and other fenestration products. That industry prefers Uw-values. The two are actually inversely related. The higher the R-value, the better insulated are the walls and ceilings. Uw is expressed as a number between 0 and 10. The lower the Uw-value, the better job a window does in keeping out the heat and cold.

### What does Solar Heat Gain Co-efficient (SHGC) mean?

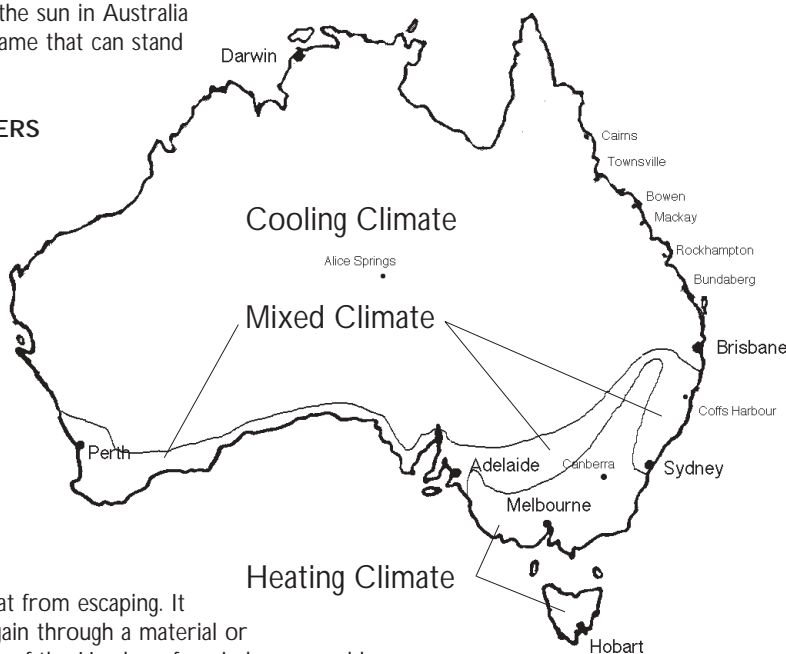
SHGC measures how well a product blocks heat caused by sunlight. The SHGC is the fraction of incident solar radiation admitted through a window, both directly transmitted, and absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.

### What is Visible Transmittance (VT)?

Visible transmittance measures how much light comes in through a product. It is an optical property that indicates the amount of visible light transmitted. VT is expressed as a number between 0 and 1. The higher the number, the more light is transmitted.

### Why do I need the air infiltration figure from my AS2047 test report for an energy rating?

Air infiltration (or leakage) is indicated on a test report and expressed as L/s m<sup>2</sup>. Heat loss and gain occur by infiltration through cracks in the window assembly. The lower the air infiltration figure, the less air will pass through the cracks in the window assembly, improving the energy rating.

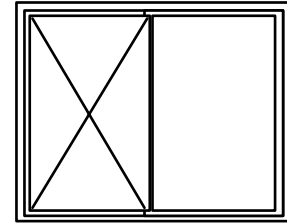


**Residential sliding windows (Series 501 - 506)**

Will accept single panes of glass up to 6.76mm thick or using inlay channel adaptor as shown left 20mm insulating glass units can also be fitted.

Note: Double glazed units with inlay channel adaptor can only be fitted into design types 502 and 504.

For larger windows fitted with heavy insulating glass units consider using Magnum™ sliders.



Glass Description	% Improvement		U-value Uw	SHGC
	COOLING	HEATING		
3mm Clear	9%	8%	5.013	0.793
5mm Clear	11%	8%	4.961	0.774
5mm EverGreen	28%	-3%	4.881	0.579
6.38mm Clear	12%	8%	4.887	0.622
6.38mm ComfortPlus Low-E	32%	23%	3.155	0.596

**19mm Insulating Glass Units**

3/11/3 Clear / Clear	24%	28%	3.093	0.674
3/11/5 Clear / Clear	25%	28%	3.077	0.665
4/11/4 Clear / Clear	26%	28%	3.045	0.658
4/12/3 EverGreen / Clear	43%	16%	3.099	0.487
4/10/5 EverGreen / Clear	43%	15%	3.155	0.485
4/11/4 Clear / En.Adv.Low-E	31%	32%	2.591	0.618
4/11/4 EverGreen / En.Adv.Low-E	49%	21%	2.591	0.437

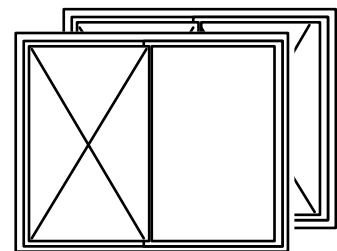
Window Performance calculated using LBNL software with ANAC climate condition.

**'SoundOUT' Sliding Window (Series 531)**

'SoundOUT' sliding windows were primarily designed to keep noise out. But a side benefit with this type of product is that you get a thermally broken window that gives good thermal transmission numbers.

'SoundOUT' can also be used to increase security by fitting, say, laminated glass to the inner panels and fitting these sashes with the proprietary ventilation shoot bolt locking system.

We can also offer double glazed sliding windows, sliding doors, hinged and bi-folding doors and for large sliding doors we have SlideMASTER™.



Glass Description	% Improvement		U-value Uw	SHGC
	COOLING	HEATING		
3/100/3 Clear / Clear	25%	39%	2.408	0.678
3/100/6.38 Clear / Clear	27%	38%	2.415	0.663
4/100/6.38 EverGreen / Clear	47%	25%	2.437	0.464
4/100/4 Clear / En. Adv. Low-E	32%	41%	2.038	0.624
4/100/4 EverGreen / En. Adv. Low-E	52%	27%	2.040	0.416

Window Performance calculated using LBNL software with ANAC climate condition.



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## WERS - Window & Door Energy Ratings Residential Windows Series 514 and 516, 517

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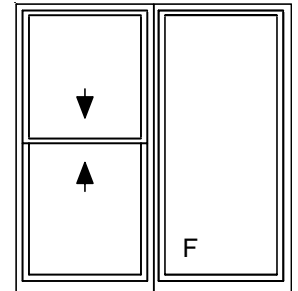
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### Residential Double-hung Window (Series 514)

Residential double-hung windows will accept single panes of glass up to 6.76mm thick.

For larger windows fitted with heavy insulating glass units consider using Magnum™ sliders or Magnum™ awnings. Go on line and check our New Products page for the latest information.

We can also offer double glazed sliding, hinged and bi-folding doors.



Glass Description	% Improvement		U-value Uw	SHGC
	COOLING	HEATING		
3mm Clear	9%	8%	5.019	0.794
5mm Clear	11%	8%	4.968	0.774
5mm EverGreen	29%	-3%	4.888	0.597
6.38mm Clear	13%	8%	4.894	0.760
6.38mm ComfortPlus Low-E	32%	23%	3.161	0.596

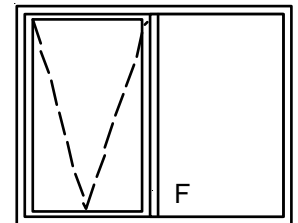
Window Performance calculated using LBNL software with ANAC climate condition.

### Residential Awning Window (Series 516)

We have a variety of sash and glazing bead options that allow us to offer the residential awning windows with glass thickness up to 20mm insulating glass units.

For larger windows fitted with heavy insulating glass units consider using Magnum™ awnings.

We can also offer double glazed sliding, hinged and bi-folding doors.



Glass Description	% Improvement		U-value Uw	SHGC
	COOLING	HEATING		
3mm Clear	13%	9%	4.773	0.758
5mm Clear	15%	9%	4.724	0.739
5mm EverGreen	32%	-1%	4.647	0.570
6.38mm Clear	16%	9%	4.653	0.726
6.38mm ComfortPlus Low-E	35%	23%	2.994	0.569

### 19mm Insulating Glass Units

3/11/3 Clear / Clear	24%	32%	2.817	0.678
3/11/5 Clear / Clear	26%	32%	2.801	0.669
4/11/4 Clear / Clear	26%	22%	2.767	0.662
4/12/3 EverGreen / Clear	44%	20%	2.824	0.483
4/10/5 EverGreen / Clear	44%	19%	2.833	0.481
4/11/4 Clear / En.Adv.Low-E	32%	37%	2.294	0.620
4/11/4 EverGreen / En.Adv.Low-E	50%	25%	2.294	0.431

Window Performance calculated using LBNL software with ANAC climate condition.

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 Date: May 06  
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# Architectural Information

## WERS - Window & Door Energy Ratings Residential Sliding Doors Series 541 and 533

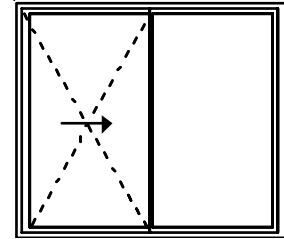


### Residential Sliding Door (Series 541)

Residential sliding doors will accept single panes of glass up to 7.52mm thick or using inlay channel adaptor as shown left 20mm insulating glass units can also be fitted.

Note: Heavy doors fitted with thick glass will be fitted with heavy duty double-bogey wheel carriages.

For larger doors fitted with heavy insulating glass units consider using SlideMASTER™ doors.



Glass Description	% Improvement		U-value Uw	SHGC
	COOLING	HEATING		
5mm Clear	9%	5%	5.189	0.787
5mm EverGreen	27%	-5%	5.109	0.610
6.38mm Clear	11%	5%	5.115	0.773
6.38mm ComfortPlus Low-E	30%	20%	3.387	0.609

### 19mm Insulating Glass Units

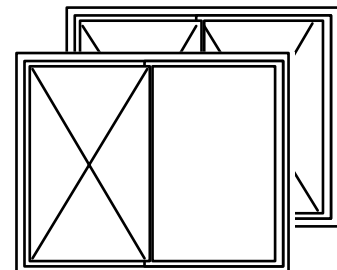
4/11/4 Clear / Clear	24%	27%	3.189	0.675
5/9/5 Clear / Clear	25%	25%	3.289	0.663
4/11/4 EverGreen / Clear	41%	15%	3.269	0.500
4/11/4 Clear / En.Adv.Low-E	29%	31%	2.728	0.634
4/11/4 EverGreen / En.Adv.Low-E	47%	19%	2.728	0.450

Window Performance calculated using LBNL software with ANAC climate condition.

### 'SoundOUT' Sliding Door (Series 533)

'SoundOUT' sliding doors were primarily designed to keep noise out. But a side benefit with this type of product is that you get a thermally broken window that gives good thermal transmission numbers.

We can also offer double glazed sliding windows, sliding doors, hinged and bi-folding doors and for large sliding doors we have SlideMASTER™.



Glass Description	% Improvement		U-value Uw	SHGC
	COOLING	HEATING		
5/90/6.38 Clear / Clear	26%	35%	2.632	0.666
5/90/6.38 EverGreen / Clear	45%	22%	2.655	0.477
5/90/5 Clear / En. Adv. Low-E	30%	38%	2.253	0.636
5/90/5 EverGreen / En. Adv. Low-E	51%	25%	2.253	0.427

Window Performance calculated using LBNL software with ANAC climate condition.



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## WERS - Hinged Doors Series 548 & 549 and SlideMASTER™ Sliding Doors Series 702

Date: May 06

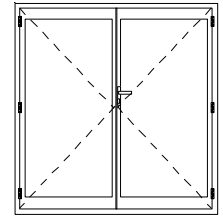
Replaces: Apr 04

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### Hinged Door (Series 548 & 549) & 548 Bifold Doors

We have a variety of panels and glazing bead options that allow us to offer hinged and bi-folding doors with glass thickness up to 20mm insulating glass units.

We can also offer double glazed residential sliding and SlideMASTER™ doors



Glass Description	% Improvement		U-value Uw	SHGC
	COOLING	HEATING		
5mm Clear	24%	2%	4.844	0.651
5mm EverGreen	37%	-6%	4.784	0.518
6.38mm Clear	25%	2%	4.788	0.640
6.38mm ComfortPlus Low-E	40%	13%	3.488	0.517

### 19mm Insulating Glass Units

4/11/4 Clear / Clear	33%	21%	3.263	0.590
5/9/5 Clear / Clear	34%	19%	3.338	0.580
4/11/4 EverGreen / Clear	47%	11%	3.328	0.448
4/11/4 Clear / En.Adv.Low-E	37%	24%	2.889	0.557
4/11/4 EverGreen / En.Adv.Low-E	52%	14%	2.889	0.407

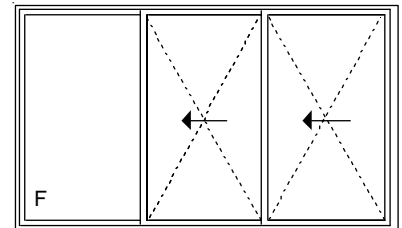
Window Performance calculated using LBNL software with ANAC climate condition.

### SlideMASTER™ Sliding Door (Series 702)

We have a variety of panel options that allow us to offer this heavy duty sliding door up to 24mm insulating glass units.

Note: Check with your local fabricator as to the maximum available size for insulating glass panels in your area as this may be the limiting factor.

We can also offer double glazed residential sliding, hinged and bi-folding doors.



Glass Description	% Improvement		U-value Uw	SHGC
	COOLING	HEATING		
5mm Clear	12%	2%	5.134	0.760
5mm EverGreen	28%	-8%	5.240	0.596
6.38mm Clear	13%	2%	5.245	0.747
6.38mm ComfortPlus Low-E	31%	18%	3.648	0.596

### 19mm Insulating Glass Units

4/11/4 Clear / Clear	23%	24%	3.435	0.688
5/9/5 Clear / Clear	24%	22%	3.527	0.676
4/11/4 EverGreen / Clear	40%	12%	3.515	0.514
4/11/4 Clear / En.Adv.Low-E	28%	29%	2.977	0.647
4/11/4 EverGreen / En.Adv.Low-E	46%	17%	2.977	0.464

### 24mm Insulating Glass Units

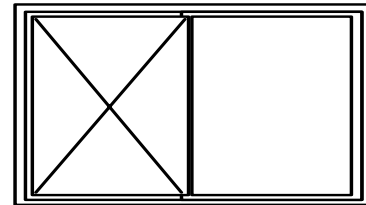
6/12/6 Clear / Clear	28%	27%	3.031	0.638
6/12/6 EverGreen / Clear	48%	14%	3.060	0.439
6/12/6 Clear / En.Adv.Low-E	33%	31%	2.608	0.604
6/12/6 EverGreen / En.Adv.Low-E	54%	17%	2.607	0.389

Window Performance calculated using LBNL software with ANAC climate condition.



### Magnum™ Sliding Window (Series 601 & 602)

Magnum™ sliding windows will accept single panes of glass up to 7.52mm thick or using special stiles and rails we can fit 16mm insulating glass units. Fitting an inlay adaptor channel as shown left allows us to fit 20mm IGU's. We can also offer a matching double glazed [Magnum™ awning window](#).



Glass Description	% Improvement		U-value Uw	SHGC
	COOLING	HEATING		
4mm Clear	16%	5%	4.930	0.722
5mm Clear	17%	4%	4.919	0.714
5mm EverGreen	32%	-5%	4.849	0.559
6.38mm Clear	18%	4%	4.854	0.702
6.38mm ComfortPlus Low-E	35%	17%	3.334	0.558

### 16mm Insulating Glass Units

4/8/4 Clear / Clear	26%	17%	3.754	0.646
4/8/4 EverGreen / Clear	42%	7%	3.754	0.484
4/8/4 Clear / En.Adv.Low-E	31%	19%	3.422	0.605
4/8/4 EverGreen / En.Adv.Low-E	47%	9%	23.422	0440

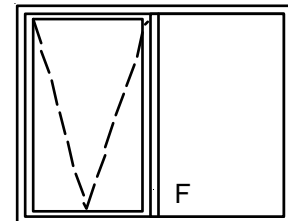
### 19mm Insulating Glass Units

4/11/4 Clear / Clear	26%	18%	3.676	0.646
4/11/4 EverGreen / Clear	43%	7%	3.677	0.480
4/11/4 Clear / En.Adv.Low-E	31%	21%	3.280	0.607
4/11/4 EverGreen / En.Adv.Low-E	48%	10%	3.280	0.433

Window Performance calculated using LBNL software with ANAC climate condition.

### Magnum™ Awning Window (Series 616)

We have a variety of sash and glazing bead options that allow us to offer large Magnum™ awning windows with glass thickness up to 24mm insulating glass units. We can also offer a matching double glazed [Magnum™ sliding window](#). Vantage have a range of door products that will accept double glazing: [sliding](#), [hinged](#) and [bi-folding doors](#) and for large sliding doors we have [SlideMASTER™](#).



Glass Description	% Improvement		U-value Uw	SHGC
	COOLING	HEATING		
4mm Clear	16%	5%	4.944	0.728
5mm Clear	17%	5%	4.933	0.720
5mm EverGreen	32%	-4%	4.862	0.563
6.38mm Clear	18%	5%	4.867	0.708
6.38mm ComfortPlus Low-E	36%	18%	3.327	0.562

### 19mm Insulating Glass Units

4/11/4 Clear / Clear	27%	27%	3.211	0.651
4/11/4 EverGreen / Clear	44%	15%	3.200	0.483
4/11/4 Clear / En.Adv.Low-E	32%	31%	2.681	0.612
4/11/4 EverGreen / En.Adv.Low-E	50%	19%	2.681	0.435

### 24mm Insulating Glass Units

6/12/6 Clear / Clear	30%	25%	3.146	0.440
6/12/6 EverGreen / Clear	48%	12%	3.174	0.332
6/12/6 Clear / En.Adv.Low-E	34%	29%	2.741	0.409
6/12/6 EverGreen / En.Adv.Low-E	54%	16%	2.741	0.308

Window Performance calculated using LBNL software with ANAC climate condition.