

ultimatewindows

NCC - Achieving 7-Stars



uPVC double glazed windows

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What has changed?

All new Australian homes and apartments must comply with the 2022 National Construction Code (NCC), which will raise the minimum energy efficiency standard from the existing 6 stars to 7 stars under the Nationwide Energy Rating Scheme (NatHERS). Additionally, the other pathways, such as the Deemed-to-satisfy elemental provisions, are set to increase in rating requirements. There is now an additional rating needed above the building fabric 7-star rating criteria known as a "Whole of Home" rating.

The heating and hot water services, pool pumps, appliances and solar energy systems are considered in the "Whole of Home" rating and are used as an offset. The building rating is NOT able to be traded in the rating for the whole of house items, both are to be considered separately.

The 7-Star rating is determined using a NatHERS approved software with the addition of the "Whole of Home" component. The use of this differs from state to state with NSW continuing the use of the BASIX program, although the outcome remains the same with the rating requiring at least a 7-star result. The Deemed-to-Satisfy manual method of calculation will still exist but the calculation has changed to correlate more accurately to the NatHERS ratings. The rating consists of 3 metrics, total energy used by the dwelling, the maximum heating load, and the maximum cooling load.

When do the changes arrive?

The changes come into effect for the "General Provisions" of the NCC in May 2023. All elements of the NCC are in effect after this time with the omission of the Condensation, Energy Efficiency and Livable Housing sections which (depending on your state or territory) come into effect from October 2023. The east coast states have decided to act as per the table below:

	General Provisions	Condensation	Energy Efficiency	Livable Housing
QLD	1st May 2023	1st October 2023		
VIC	1st May 2023	1st October 2023		
NSW	1st May 2023	1st October 2023		Not Advised

"Whole of Home" explained.

NatHERS is expanding to include the rating to include the whole of the home as opposed to just the thermal envelope. This now means that the rating will include the fixed appliances of the home to determine the rating. What this means for consumers is there is greater choice in the appliances and components that go into the energy rating and the performance of their home.



How is "Whole of Home" Calculated?

"Whole of Home" is calculated by offsetting the star rating with the eligible components and appliances from the build. This calculation then results in a score out of 100, this score is the "Whole of Home" performance with 100 the best performing.

New certificates

So now when the customer gets an energy rating, they will have 2 ratings to look at, the first is the usual rating out of 10 stars as per what we have seen in the past and secondly a new rating for the "Whole of Home" score out of 100. The higher the number in both cases the better performing the home is.

How to get a project to 7-stars.

Building to 7 stars doesn't have to be expensive or difficult, but by including certain straightforward design and material choices, it may significantly improve the home's overall energy efficiency and rating.

Engage with approved assessors early.

Your assessor may be very helpful early in the design phase since they are trained to increase ratings and can provide affordable solutions to get a 7-star rating.

Heating and cooling loads.

Part of the new assessment is the change in the usage targets for heating and cooling loads in individual climate zones. New homes will need to meet an overall megajoule usage target to meet 7-stars. Not only this but the heating and cooling loads will also be subject to their own targets based on the climate zone. For example, in Climate zone 60 (Tullamarine) the overall target is 99MJ/m² with the individual heating load 82MJ/m² and individual cooling load 22MJ/m². This means in some cases you might need to exceed a 7-star rating to get over the line. This means to pass there are now 2 stages, the 7-stars and the individual energy target.

So... what options can be effective in altering performance.

There are significant variables that can alter the results of the energy rating. Knowing the combinations that work and the combinations that don't will assist in making the right choices or offerings for you client. These include:

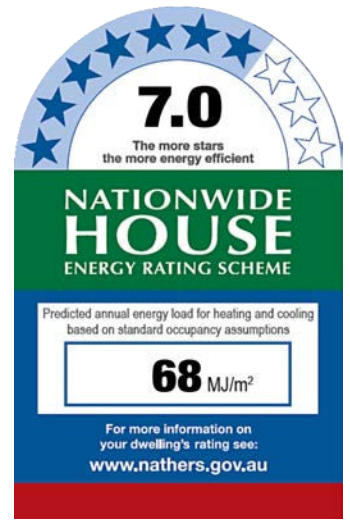
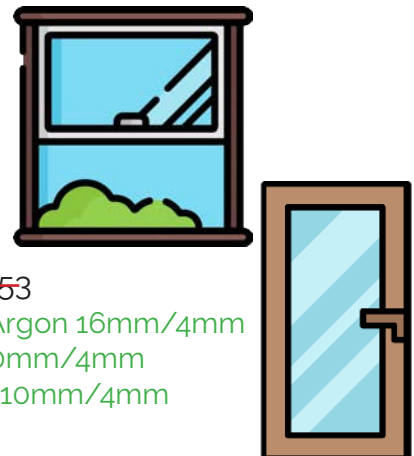
- Insulation & air sealing
- Orientation of dwelling
- Window coverings
- Lighting
- Space heating and cooling
- Water heating
- Construction materials
- Solar Systems
- Type of appliances
- **WINDOWS AND DOORS**

Current 6-star inclusions Baseline (e.g.):

- R1.38 Roof Blanket
- R5 Ceiling Insulation + 2.5 Eave Blanket
- 900/1200mm Ceiling fans
- R3.5 Under Floor Insulation
- 300mm Waffle Pod Slab
- R2.5 External Wall Insulation
- Windows with a 23.8% W/F Ratio
U3.4 / SHGC 0.47-0.53

Baseline upgraded to get to 7-star inclusions (e.g.):

- R1.38 Roof Blanket
- ~~R5~~ **R6** Ceiling Insulation + 2.5 Eave Blanket
- ~~900/1200mm~~ **1200-1400mm** Ceiling fans
- ~~R3.5~~ **R4** Under Floor Insulation
- ~~300mm~~ **375mm** Waffle Pod Slab
- ~~R2.5~~ **R2.7** External Wall Insulation
- Windows with a ~~23.8%~~ **20%** W/F Ratio - ~~U3.4 / SHGC 0.47-0.53~~
 - Fixed Window U=2.2 / SHGC=0.49** Low-E 4mm/Argon 16mm/4mm
 - Sliding U=2.65 / SHGC=0.5** Low-E 4mm/Argon 10mm/4mm
 - Awning U=2.83 / SHGC=0.42** Low-E 4mm/Argon 10mm/4mm
- **Dark Coloured Window Frames & Colourbond Roof**
- **IC4 Downlights** (that can be covered with insulation)



How can Ultimate Windows Help?

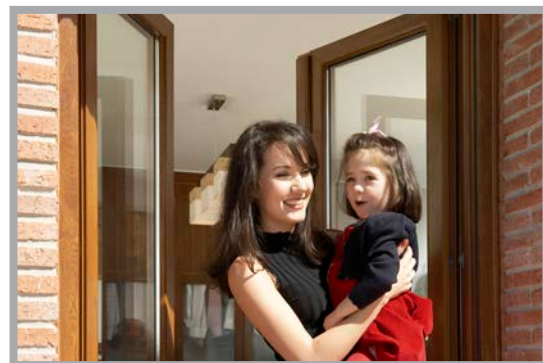
Ultimate windows offer expert knowledge and high-quality products that will assist in meeting and exceeding the new targets. With our focus on thermal efficient uPVC window frames and double glazing we can provide options to increase the performance of your windows and contribute to a higher energy rating and provide a more efficient home for you, long term.

Highly Efficient Window Frames

We offer several window systems that can be used and combined to give your home the best possible outcomes toward the 2-step process of energy rating your new home.

Euro System

The Euro system provides a high level of insulation and longevity while being low-maintenance and 100% recyclable. The thermal performance comes from the design of 5 chambers in the 70mm frame width also offering acoustic insulation. Most frames and operations offer gasket sealing and multi-point locking allowing for high levels of air tightness. Available in Awning, Tilt & Turn, Casement and fixed windows. As well as Hinged, French, and Tilt & Turn Doors. Offering U-Values between 2.3 and 1.6 and SHGC between 0.43 to 0.24.

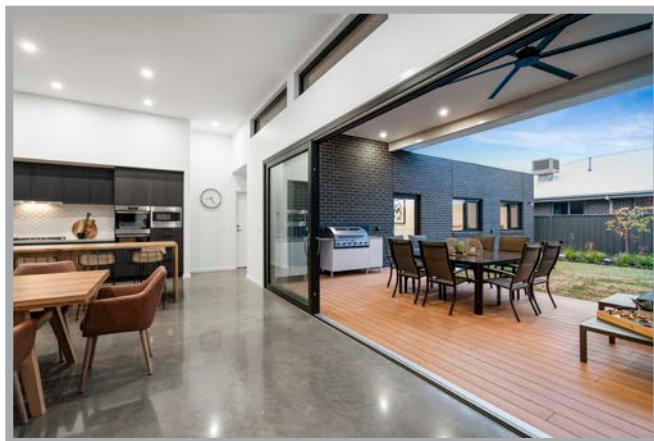


Sliding System

Our sliding system is versatile system to provide access points to your home. The 92mm system provides a high performing option for sliding doors with the main profiles and materials within the system specifically designed to offer a high level of insulation. Offering u-Values between 2.4 and 1.8 and SHGC between 0.43 and 0.27.

Lift & Slide System

Our Lift & Slide system is a gasket sealed sliding system designed with special gaskets for superior insulation. All profiles and accessories in this system are designed based on a 175mm frames width, while the sashes are 76mm wide with 4 insulation chambers. The Lift & Slide system can reach U-Values between 2.4 and 1.7 and SHGC between 0.43 and 0.27.



Legend System

The Legend system provides the highest level of insulation and airtightness of all our ranges. With a wider 80mm profile and 6 chamber design the insulation of this frame system is superior to most others on the market. Incorporating a 3-gasket system and multi point locking on all frames, the Legend system offers airtightness that will meet a passive house design standard. Available in Awning, Tilt & Turn, Tilt & Slide and Fixed windows. As well as Hinged, French, Tilt & Turn and Tilt & Slide Doors. The legend system offers a U-Value down to 1.2 and SHGC down to 0.26.

A tale of two star ratings.

Comparing a 6-Star build to a 7-Star build both using uPVC windows with variations in glazing to illustrate the benefits of uPVC frames to the overall Star Rating and the Heating and cooling loads.

6-Star (6.0)	Element	7-Star (7.1)
300mm Waffle Pod Slab with R1.7 underslab insulation for an overall R2.4 floor insulation	Slab & Floor Insulation	300mm Waffle Pod Slab with R1.7 underslab insulation for an overall R2.4 floor insulation
R3.8 Wall Insulation	External Wall Insulation	R3.8 Wall Insulation
R6 Ceiling insulation	Ceiling Insulation	R6 Ceiling insulation
Un-Insulated internal walls	Internal Wall Insulation	Un-Insulated internal walls
Windows U-Value 2.4, SHGC 0.43 (Euro Double Glazed - Clear Glass) 4mm Clear / 16mm Argon / 4mm Clear	Glazing	Windows U-Value 1.64, SHGC 0.35 (Euro Double Glazed - Low-E & Warm Edge Spacer) 4mm Low-E / 16mm Argon / 4mm Clear
R1.3 insulation under roof deck	Roof Deck Insulation	R1.3 insulation under roof deck
Heating Load 158.5 MJ/m ²	HEATING LOAD	Heating Load 114.0 MJ/m ²
Cooling Load 16.7 MJ/m ²	COOLING LOAD	Cooling Load 12.2 MJ/m ²
Total Load 175 MJ/m ²	TOTAL ENERGY LOAD	Total Load 126.1 MJ/m ²

Key Notes

- Engage with your builder/designer and energy raters early in your project.
- Look at the BAL (Bushfire Attack Level) as this can have an impact on your glazing choices.
- Have a good look at display homes and find out their ratings so you can get a good ideas to maximise efficiency
- Educate yourself on ways to increase your efficiency in the design you want. Don't settle with reducing glazing or changing operation if there are more efficient options for your design.
- Plan to incorporate other energy efficient products to use in the project as this will add to the effectiveness and ultimately drag down your costs long term.
- Remember the energy rating is not just a checkered flag that you must meet. It is a tool you can use to make your/your customers' home more efficient for the future.
- Engage Ultimate Windows to assist in the conversation regarding the products available to you, we can provide expert advice to assist in your decision making.



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