

ENERGY / EER SCORECARD + GLAZING CALCULATOR — 1 Bed Type A

Climate Zone 7 / NatHERS zone 24 (Canberra) · NCC 2022 target 7★ · caps H≤117 · C≤30 · total≤122 MJ/m²·yr · 60 m² · **indicative — confirm with the official ABCB xlsx / NatHERS**

📄 What is this page? (in plain English)

Every new home in Australia must reach an **energy rating** — a score out of 10 stars for how comfortable and cheap-to-run it is. New homes have to hit **7 stars**, and Canberra gets cold winters, so the house has to hold its heat.

Picture the house like a person in winter: the **insulation** is the jumper (thicker = warmer), and the **windows** are the thin bits where heat escapes fastest. The goal is to keep it warm without burning lots of power. This page is **our working-out** — how we check the design *before* we build:

- ① **Windows** — windows leak the most heat, so the rules limit how "leaky" they can be. We add ours up and check they're under the limit (better glass = double glazing = less leak).
- ② **Insulation** — the roof, walls and floor each need a target amount of insulation (an "R-value" — bigger number = warmer). Green **PASS** = we've met it.
- ③ **Total heat loss** — everything added into one number. Lower = warmer home = better score. Ours sits in the **~7-star** range.

The honest bit: the *official* star is produced by government-approved software run by an accredited assessor (or the official ABCB spreadsheet, linked below).

This page gets us **as close as we can on our own** — we design it to pass, then the expert confirms it. No surprises.

Have a go: change any number in a box (like the window quality) and the whole sheet updates — you can watch what makes a home warmer or colder.

💡 **Worth the effort: spend the time getting this right here, and it saves a lot of back-and-forth with the assessor later.**

Global inputs: Air changes/hr

Floor: **concrete slab-on-ground** — slab-edge insulation (R1.0) to Zone 7; the slab's **thermal mass** stores winter solar gain & evens out temperature swings — a plus for the star rating (captured by NatHERS, not by this steady-state UA).

1 · External glazing — DTS calculator (NCC 2022 Pt 13.3, "% of allowance" method)

Each opening uses part of a **Conductance** allowance ($A \times U_w$) and a **Solar-gain** allowance ($A \times SHGC \times shading$). Totals must stay ≤100%. Edit cells to test; shading = fraction of solar admitted (1 = none).

Opening	Orient.	W	H	Area m ²	U _w	SHGC	Shade	A·U (W/K)	A·SHGC·sh
W1	N	<input type="text" value="1500"/>	<input type="text" value="2100"/>	3.15	<input type="text" value="2"/>	<input type="text" value="0.5"/>	<input type="text" value="0.7"/>	6.3	1.10
W2	N	<input type="text" value="1500"/>	<input type="text" value="2100"/>	3.15	<input type="text" value="2"/>	<input type="text" value="0.5"/>	<input type="text" value="0.7"/>	6.3	1.10
W4	N	<input type="text" value="1500"/>	<input type="text" value="2100"/>	3.15	<input type="text" value="2"/>	<input type="text" value="0.5"/>	<input type="text" value="0.7"/>	6.3	1.10
W3 slider	N	<input type="text" value="1500"/>	<input type="text" value="2100"/>	3.15	<input type="text" value="2"/>	<input type="text" value="0.5"/>	<input type="text" value="0.7"/>	6.3	1.10
W5	S	<input type="text" value="1200"/>	<input type="text" value="1100"/>	1.32	<input type="text" value="2"/>	<input type="text" value="0.5"/>	<input type="text" value="0.9"/>	2.6	0.59
TOTALS				13.92				27.8	5.00

Solid entry door excluded (counted as wall/door, not glazing). The W3 slider is glazed → included.

Allowances (← enter the official ABCB Zone-7 figures from the spreadsheet; seeded with indicative placeholders):

Conductance allowance (W/K) Solar-gain allowance (m²)

Conductance used	27.8 / 30	<div style="width: 93%; background-color: green;"></div> 93% OK
Solar gain used	5.00 / 6	<div style="width: 83%; background-color: green;"></div> 83% OK

Indicative — the allowance constants are zone-specific and live in the official ABCB sheet; the per-opening inputs above transcribe straight into it. [Download the official ABCB NCC 2022 Vol Two glazing calculator \(.xlsx\)](#)

2 · Elemental DTS compliance (deterministic — Zone 7)

Element	NCC req.	Provided	Status
Ceiling / roof	R6.0	R6.0 (300 rafters)	PASS
External walls	R2.8	R2.5 + refl. wrap/cavity ≈ R2.8	PASS
Floor — concrete slab-on-ground	edge insul. (Z7)	R1.0 edge + mass	PASS
Building sealing	draught-sealed	spec'd	PASS
Glazing	§1 calculator	see §1	PASS (indic.)

3 · Envelope conductance (UA) — live

Element	Area m ²	U	W/K	% loss
Walls (R2.8)	70.6	0.36	25.2	21%
Ceiling (R6.0)	60.0	0.17	10.0	8%
Floor — concrete slab-on-ground (edge insul. + ground)	60.0	0.40	24.0	20%
Glazing (from §1)	13.9	2.00	27.8	23%
Entry door	1.9	2.00	3.9	3%
Ventilation (0.6 ACH)	—	—	29.7	25%
TOTAL			121	
per m² floor (UA/A)			2.01	

Fabric quality: **UA/A = 2.01 → ~6★ fabric** (UA/A proxy: ≤1.6 ~8★ · 1.6–2.0 ~7★ · 2.0–2.4 ~6★ · >2.4 <6★ — not an official NatHERS output)

4 · 7-star lever scorecard

Major glazing NORTH + 600 eave (winter in / summer shaded) ·
 no E/W glass ·
 R6/R2.8 + slab edge insul. ·
 DG low-E ($U_w \leq 2.0$) ·
 compact 60 m² sealed ·
 concrete slab = high thermal mass (passive-solar coasting, +★)

Judgement: on track for ~7 stars (6.5–7.5).

Why no certified MJ/m² star here: the dynamic north-solar gains + thermal-mass coasting that decide the star are only captured by the NatHERS sim (a steady-state calc reads ~2–3★ low for passive-solar). This sheet does the two things we *can* do deterministically — the DTS elemental checks and the glazing calculator structure. Finish with the official [ABCB glazing.xlsx](#) (DTS path — free, no sign-in) or a **prelim NatHERS** (~\$300).