# Nationwide House Energy Rating Scheme® NatHERS® Certificate No. 7SK6LD6C63-01

**Generated on 20 Dec 2024 using FirstRate5: 5.5.5a (3.22)**

## Property

| | |
|---|---|
| **Address** | 3 Forbes Street, Moama, NSW, 2731 |
| **Lot/DP** | 1/DP851678 |
| **NCC Class*** | Class 1a |
| **Floor/all Floors Type** | New Home |

## Plans

| | |
|---|---|
| **Main plan** | 24-094/20.12.24 |
| **Prepared by** | Shaun Amos |

## Construction and environment

| **Assessed floor area [m²]*** | | **Exposure type** |
|---|---|---|
| Conditioned* | 223.6 | protected |
| Unconditioned* | 404 | **NatHERS climate zone** |
| Total | 627.6 | 27 Mildura AMO |
| Garage | 394.4 | |

## Accredited assessor

| | |
|---|---|
| **Name** | Shaun Amos |
| **Business name** | Sap Architecture |
| **Email** | shaun@saparchitecture.com.au |
| **Phone** | 0499322692 |
| **Accreditation No.** | DMN/19/1941 |
| **Assessor Accrediting Organisation** | Design Matters National |
| **Declaration of interest** | Yes, managed |

## NCC Requirements

| | |
|---|---|
| **NCC provisions** | Volume 2 |
| **State/Territory variation** | Yes |

**National Construction Code (NCC) requirements**

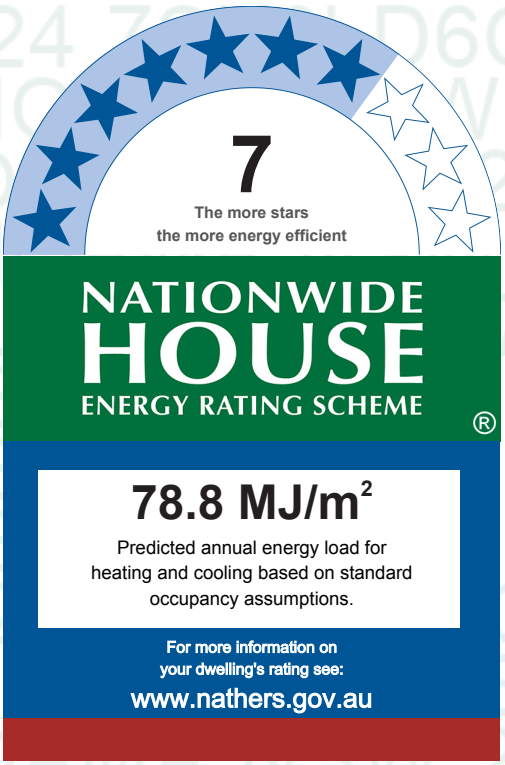
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

## Thermal performance star rating




## Thermal performance [MJ/m²]

**Limits taken from ABCB Standard 2022**

| | Heating | Cooling |
|---|---|---|
| **Modelled** | 43.7 | 35.1 |
| **Load limits** | N/A | N/A |

**Features determining load limits**

| | |
|---|---|
| Floor type (lowest conditioned area) | N/A |
| NCC climate zone 1 or 2 | N/A |
| Outdoor living area | N/A |
| Outdoor living area ceiling fan | N/A |

## Whole of Home performance rating

No Whole of Home performance rating generated for this certificate

## Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=7SK6LD6C63-01 When using either link, ensure you are visiting www.fr5.com.au.

*Refer to glossary.

## About the ratings

**Thermal performance rating**

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

**Whole of Home performance rating**

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

## Heating & Cooling Load Limits

**Additional information**

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB NatHERS heating and cooling load limits Standard 2022 for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

**Setting options:**

Floor type:
- CSOG – Concrete Slab on Ground
- SF – Suspended Floor (or a mixture of CSOG and SF)
- NA – Not Applicable

NCC climate Zone 1 or 2:
- Yes
- No
- NA – not applicable

Outdoor living area:
- Yes
- No
- NA – not applicable

Outdoor living area ceiling fan:
- Yes
- No
- NA – not applicable

## Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

## Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar

**Energy use:**

No Whole of Home performance assessment conducted for this certificate.

**Greenhouse gas emissions:**

No Whole of Home performance assessment conducted for this certificate.

**Cost:**

No Whole of Home performance assessment conducted for this certificate.

**Graph key:**

*Refer to glossary.

## Certificate check

The checklist covers important items impacting the dwelling's ratings.
It is recommended that the accuracy of the whole certificate is checked.

Note: The boxes indicate when and who should check each item.
It is not mandatory to complete this checklist.

| | Approval stage | | Construction stage | | |
|---|---|---|---|---|---|
| | Assessor checked | Consent authority/ surveyor checked | Builder checked | Consent authority/ surveyor checked | Occupancy/other |
| **Genuine certificate check** | | | | | |
| Does this Certificate match the one available at the web address or QR code verification link on the front page? | | ☐ | ☐ | ☐ | ☐ |
| Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate? | | ☐ | ☐ | ☐ | ☐ |
| **Thermal performance check** | | | | | |
| **Windows and glazed doors** | | | | | |
| Does the window size, opening type and location shown on the NatHERS-stamped plans or as installed match what is shown in *'Window and glazed door schedule'* and *'Roof window schedule'* tables on this Certificate? | ☐ | ☐ | ☐ | ☐ | ☐ |
| Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the *'Window and glazed door type and performance'* and *'Roof window type and performance'* tables on this Certificate? | | | ☐ | ☐ | ☐ |
| **External walls** | | | | | |
| Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the External wall type table on this Certificate? | ☐ | ☐ | ☐ | ☐ | ☐ |
| Does the external wall shade (colour) match what is shown in the *'External wall type'* table on this Certificate? | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Floor** | | | | | |
| Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Floor type'* table on this certificate? | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Ceiling penetrations*** | | | | | |
| Does the *'quantity'* and *'type'* of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Ceiling penetrations'* table on this Certificate? | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Ceiling** | | | | | |
| Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Ceiling type'* table on this Certificate? | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Roof** | | | | | |
| Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the *'Roof type'* table on this Certificate? | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Apartment entrance doors (NCC Class 2 assessments only)** | | | | | |
| Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate. | ☐ | ☐ | | ☐ | ☐ |
| **Exposure*** | | | | | |
| Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected". | ☐ | ☐ | | ☐ | ☐ |
| **Heating and cooling load limits*** | | | | | |
| Do the load limits settings (shown on page 1) match the values in the ABCB Standard 2022: NAtHERS heating and cooling load limits for the appropriate climate zone? | ☐ | ☐ | ☐ | ☐ | ☐ |

*Refer to glossary.

## Certificate check

Continued

| | Approval stage | | Construction stage | | |
|---|---|---|---|---|---|
| | Assessor checked | Consent authority/ surveyor checked | Builder checked | Consent authority/ surveyor checked | Occupancy/other |
| ***Additional NCC requirements for thermal performance (not included in the NatHERS assessment)*** | | | | | |
| **Thermal bridging** | | | | | |
| Does the dwelling meet the NCC requirement for thermal bridging? | | ☐ | ☐ | ☐ | ☐ |
| **Insulation installation method** | | | | | |
| Has the insulation been installed according to the NCC requirements? | | | ☐ | ☐ | ☐ |
| **Building sealing** | | | | | |
| Does the dwelling meet the NCC requirements for Building Sealing? | | ☐ | ☐ | ☐ | ☐ |
| **Whole of Home performance check** (not applicable if a Whole of Home performance assessment is not conducted) | | | | | |
| **Appliances** | | | | | |
| Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate? | ☐ | ☐ | ☐ | ☐ | ☐ |
| Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate? | ☐ | ☐ | ☐ | ☐ | ☐ |
| Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate? | ☐ | ☐ | ☐ | ☐ | ☐ |
| Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate? | ☐ | ☐ | ☐ | ☐ | ☐ |
| Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the *'Onsite Renewable Energy schedule'* on this Certificate? | ☐ | ☐ | ☐ | ☐ | ☐ |
| ***Additional NCC Requirements for Services (not included in the NatHERS assessment)*** | | | | | |
| Does the lighting meet the artificial lighting requirements specified in the NCC? | | ☐ | ☐ | ☐ | ☐ |
| Does the hot water system meet the additional requirements specified in the NCC? | | ☐ | ☐ | ☐ | ☐ |
| **Provisional values* check** | | | | | |
| Have provisional values* been used in the assessment and, if so, are they noted in *'Additional notes'* table below? | ☐ | ☐ | | | |
| ***Other NCC requirements*** | | | | | |

Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.

### Additional notes

Declaration of interest:

I am the designer of the building

*Refer to glossary.

## Room *schedule*

| Room | Zone Type | Area [m²] |
|---|---|---|
| Garage 1 | garage | 197.2 |
| Store | dayTime | 85.8 |
| WC | dayTime | 2.2 |
| L'Dry | unconditioned | 3.6 |
| Store | dayTime | 28.2 |
| Bedroom 6 | bedroom | 10.8 |
| Unconditioned 7 | unconditioned | 6 |
| Bedroom 8 | bedroom | 10.8 |
| WC | dayTime | 2.2 |
| Night 10 | nightTime | 6.6 |
| Night 11 | nightTime | 9.5 |
| Bedroom 12 | bedroom | 18 |
| Kitchen/Living 13 | kitchen | 54.6 |
| Garage 14 | garage | 197.2 |

## Window and glazed door *type and performance*

Default* windows

| Window ID | Window description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| | | | | SHGC lower limit | SHGC upper limit |
| No Data Available | | | | | |

Custom* windows

| Window ID | Window description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| | | | | SHGC lower limit | SHGC upper limit |
| AWS-034-37 B | 729/730 Thermal Heart Bifold Door DG 638VLm/12Ar/6SE | 2.58 | 0.42 | 0.4 | 0.44 |
| AWS-049-07 B | 726 Thermal Heart Fixed Window SG LightbridgeNeutralSI_638_12Ar_6mm | 2.05 | 0.35 | 0.33 | 0.37 |
| AWS-019-62 A | 549 ED Al Entry Door DG 017_AGG MAX Clr Iam 6_8_638 | 3.34 | 0.19 | 0.18 | 0.2 |
| VAN-003-84 A | 602 Magnum Al Sliding Window DG 4EnviroClr-10Ar-4KlymetShieldClr | 3.97 | 0.46 | 0.44 | 0.48 |
| AWS-034-17 B | 729/730 Thermal Heart Bifold Door DG 6.38CPGy/12/6 | 2.8 | 0.39 | 0.37 | 0.41 |
| RYL-402-040 B | Thermally Broken Fixed Lite Window DG 01 - LightBridge_ClrS0_4-12-4 | 1.84 | 0.51 | 0.48 | 0.54 |

## Window and glazed door *schedule*

*Refer to glossary.

| Location | Window ID | Window no. | Height [mm] | Width [mm] | Window type | Opening % | Orientation | Window shading device* |
|---|---|---|---|---|---|---|---|---|
| Store | AWS-034-37 B | Opening 6 | 2400 | 4250 | casement | 90.0 | W | No |
| Store | AWS-034-37 B | Opening 7 | 2400 | 4250 | casement | 90.0 | W | No |
| Store | AWS-049-07 B | Opening 5 | 2400 | 2200 | fixed | 0.0 | S | No |
| L'Dry | AWS-019-62 A | Opening 4 | 2340 | 820 | casement | 90.0 | S | No |
| Store | VAN-003-84 A | Opening 3 | 600 | 2400 | sliding | 45.0 | S | No |
| Store | VAN-003-84 A | Opening 1 | 600 | 2400 | sliding | 45.0 | E | No |
| Store | VAN-003-84 A | Opening 2 | 600 | 1800 | sliding | 45.0 | E | No |
| Bedroom 6 | VAN-003-84 A | Opening 16 | 600 | 2400 | sliding | 45.0 | E | No |
| Unconditioned 7 | VAN-003-84 A | Opening 17 | 600 | 1800 | sliding | 45.0 | E | No |
| Bedroom 8 | VAN-003-84 A | Opening 18 | 600 | 2400 | sliding | 45.0 | S | No |
| Bedroom 12 | AWS-034-17 B | Opening 23 | 2400 | 4250 | casement | 90.0 | W | No |
| Kitchen/Living 13 | AWS-034-17 B | Opening 22 | 2400 | 4250 | casement | 90.0 | W | No |
| Kitchen/Living 13 | RYL-402-040 B | Opening 19 | 2400 | 1200 | fixed | 0.0 | S | No |
| Kitchen/Living 13 | RYL-402-040 B | Opening 20 | 2400 | 1200 | fixed | 0.0 | S | No |
| Kitchen/Living 13 | RYL-402-040 B | Opening 21 | 2400 | 1200 | fixed | 0.0 | S | No |

## Roof window* *type and performance value*

Default* roof windows

| Window ID | Window description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| | | | | SHGC lower limit | SHGC upper limit |
| No Data Available | | | | | |

Custom* roof windows

| Window ID | Window description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| | | | | SHGC lower limit | SHGC upper limit |
| No Data Available | | | | | |

## Roof window* *schedule*

| Location | Window ID | Window no. | Opening % | Area [m²] | Width [mm] | Orientation | Outdoor shade | Indoor shade |
|---|---|---|---|---|---|---|---|---|
| No Data Available | | | | | | | | |

## Skylight* *type and performance*

| Skylight ID | Skylight description | Skylight shaft reflectance |
|---|---|---|
| No Data Available | | |

## Skylight* *schedule*

| Location | Skylight ID | Skylight No. | Skylight shaft length [mm] | Area [m²] | Orient-ation | Outdoor shade | Diffuser |
|---|---|---|---|---|---|---|---|

*Refer to glossary.

No Data Available

## External door *schedule*

| Location | Height [mm] | Width [mm] | Opening % | Orientation |
|---|---|---|---|---|
| Garage 1 | 2340 | 820 | 100.0 | N |
| Garage 1 | 3000 | 4000 | 100.0 | W |
| Garage 1 | 3000 | 4000 | 100.0 | W |
| Garage 1 | 3000 | 4000 | 100.0 | W |

## External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade [colour] | Bulk insulation [R-value] | Reflective wall wrap* |
|---|---|---|---|---|---|
| 1 | SAp - 150 Concrete | 0.5 | Medium | | No |
| 2 | FR5 - Brick Veneer | 0.5 | Medium | | No |
| 3 | SAp - Concrete Veneer | 0.5 | Medium | Polyurethane rigid foamed aged (k = 0.028) (R1.1);Rockwool batt (k = 0.033) (R2.7) | Yes |

## External wall *schedule*

| Location | Wall ID | Height [mm] | Width [mm] | Orientation | Horizontal shading feature* maximum projection [mm] | Vertical shading feature* (yes/no) |
|---|---|---|---|---|---|---|
| Garage 1 | 1 | 3000 | 13282 | N | 0 | No |
| Garage 1 | 1 | 3000 | 14849 | W | 0 | No |
| Garage 1 | 2 | 2700 | 140 | S | 0 | Yes |
| Garage 1 | 2 | 2700 | 140 | S | 0 | Yes |
| Garage 1 | 1 | 3000 | 14849 | E | 0 | No |
| Store | 3 | 2700 | 9423 | W | 4979 | No |
| Store | 3 | 2700 | 7789 | S | 0 | No |
| L'Dry | 3 | 2700 | 1994 | S | 0 | No |
| Store | 3 | 2700 | 2997 | S | 0 | No |
| Store | 3 | 2700 | 9418 | E | 0 | No |
| Bedroom 6 | 3 | 2700 | 3602 | E | 0 | No |
| Unconditioned 7 | 3 | 2700 | 1998 | E | 0 | No |
| Bedroom 8 | 3 | 2700 | 2997 | S | 0 | No |
| Bedroom 8 | 3 | 2700 | 3598 | E | 0 | No |
| Bedroom 12 | 3 | 2700 | 4499 | W | 4979 | No |
| Kitchen/Living 13 | 3 | 2700 | 4830 | W | 4979 | No |
| Kitchen/Living 13 | 3 | 2700 | 9892 | S | 0 | No |
| Garage 14 | 2 | 2700 | 140 | S | 0 | Yes |

*Refer to glossary.

| | | | | | | |
|---|---|---|---|---|---|---|
| Garage 14 | 2 | 2700 | 140 | S | 0 | Yes |
| Garage 14 | 1 | 2700 | 14849 | E | 0 | No |
| Garage 14 | 1 | 2700 | 13282 | N | 0 | No |
| Garage 14 | 1 | 2700 | 14849 | W | 0 | No |

## Internal wall *type*

| Wall ID | Wall type | Area [m²] | Bulk insulation |
|---|---|---|---|
| 1 | SAp - Concrete Veneer | 69 | Polyurethane rigid foamed aged (k = 0.028) (R1.1);Rockwool batt (k = 0.033) (R2.7) |
| 2 | FR5 - Internal Plasterboard Stud Wall | 47.6 | Rockwool batt: R2.5 (R2.5) |
| 3 | FR5 - Internal Plasterboard Stud Wall | 103.8 | |

## Floor *type*

| Location | Construction | Area [m²] | Sub-floor ventilation | Added insulation [R-value] | Covering |
|---|---|---|---|---|---|
| Garage 1 | FR5 - CSOG: Slab on Ground | 197.2 | Enclosed | R0.0 | none |
| Store | FR5 - CSOG: Slab on Ground | 85.8 | Enclosed | R2.3 | none |
| WC | FR5 - CSOG: Slab on Ground | 2.2 | Enclosed | R2.3 | none |
| L'Dry | FR5 - CSOG: Slab on Ground | 3.6 | Enclosed | R2.3 | none |
| Store | FR5 - CSOG: Slab on Ground | 28.2 | Enclosed | R2.3 | none |
| Bedroom 6 | sap - Alpha Floor | 10.8 | Enclosed | R6.0 | Carpet |
| Unconditioned 7 | sap - Alpha Floor | 6 | Enclosed | R6.0 | Tiles |
| Bedroom 8 | sap - Alpha Floor | 10.8 | Enclosed | R6.0 | Carpet |
| WC | sap - Alpha Floor | 2.2 | Enclosed | R6.0 | Tiles |
| Night 10 | sap - Alpha Floor | 6.6 | Enclosed | R6.0 | Tiles |
| Night 11 | sap - Alpha Floor | 9.5 | Enclosed | R6.0 | Carpet |
| Bedroom 12 | sap - Alpha Floor | 18 | Enclosed | R6.0 | Carpet |
| Kitchen/Living 13 | sap - Alpha Floor | 54.6 | Enclosed | R6.0 | Concrete |
| Garage 14 | FR5 - Timber | 197.2 | Enclosed | R0.0 | Timber (Mountain ash) |

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value [may include edge batt values] | Reflective wrap* |
|---|---|---|---|
| Garage 1 | FR5 - Timber | R0.0 | No |
| Store | sap - Alpha Floor | R6.0 | No |
| WC | sap - Alpha Floor | R6.0 | No |
| L'Dry | sap - Alpha Floor | R6.0 | No |

*Refer to glossary.

| | | | |
|---|---|---|---|
| Store | sap - Alpha Floor | R6.0 | No |
| Bedroom 6 | Plasterboard | R7.8 | No |
| Unconditioned 7 | Plasterboard | R7.8 | No |
| Bedroom 8 | Plasterboard | R7.8 | No |
| WC | Plasterboard | R7.8 | No |
| Night 10 | Plasterboard | R7.8 | No |
| Night 11 | Plasterboard | R7.8 | No |
| Bedroom 12 | Plasterboard | R7.8 | No |
| Kitchen/Living 13 | Plasterboard | R7.8 | No |
| Garage 14 | Plasterboard | R7.8 | No |

## Ceiling *penetrations**

| Location | Quantity | Type | Height [mm] | Width [mm] | Sealed/unsealed |
|---|---|---|---|---|---|
| No Data Available | | | | | |

## Ceiling *fans*

| Location | Quantity | Diameter [mm] |
|---|---|---|
| No Data Available | | |

## Roof *type*

| Construction | Added insulation [R-value] | Solar absorptance | Roof shade [colour] |
|---|---|---|---|
| Framed:Flat - Flat Framed (Metal Deck) | 0.0 | 0.5 | Medium |

## Thermal bridging *schedule for steel frame elements*

| Building element | Steel section dimensions [height x width, mm] | Frame spacing [mm] | Steel thickness [BMT,mm] | Thermal break [R-value] |
|---|---|---|---|---|
| Cathedral ceiling/flat roof | 200 x 75 | 900 | 1.50 | 0.2 |

## Appliance *schedule*

**(not applicable if a Whole of Home performance assessment is not conducted for this certificate)**

Note: A flat assumption of 5W/m2 is used for lighting, therefore lighting is not included in the appliance schedule.

### Cooling system

| Appliance/ system type | Location | Fuel type | Minimum efficiency/ performance | Recommended capacity |
|---|---|---|---|---|
| No Whole of Home performance assessment conducted for this certificate. | | | | |

### Heating system

| Appliance/ system type | Location | Fuel type | Minimum efficiency/ performance | Recommended capacity |
|---|---|---|---|---|
| No Whole of Home performance assessment conducted for this certificate. | | | | |

*Refer to glossary.

### Hot water system

| Appliance/ system type | Fuel type | Minimum efficiency/ performance | Hot Water CER Zone | Zone 3 STC | Assessed daily load |
|---|---|---|---|---|---|
| No Whole of Home performance assessment conducted for this certificate. | | | | | |

### Pool/spa equipment

| Appliance/ system type | Fuel type | Minimum efficiency/ performance | Recommended capacity |
|---|---|---|---|
| No Whole of Home performance assessment conducted for this certificate. | | | |

## Onsite renewable energy *schedule*

**(not applicable if a Whole of Home performance assessment is not conducted for this certificate)**

| System type | Orientation | System size or generation capacity |
|---|---|---|
| No Whole of Home performance assessment conducted for this certificate. | | |

## Battery *schedule*

**(not applicable if a Whole of Home performance assessment is not conducted for this certificate)**

| System type | Size [battery storage capacity] |
|---|---|
| No Whole of Home performance assessment conducted for this certificate. | |

*Refer to glossary.

# Explanatory Notes

## About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary. Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

## Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

## Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor using the NatHERS accredited software tool are presented in this report and further details or data files may be obtained from the assessor.

# Glossary

| | |
|---|---|
| **Annual energy load** | the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions. |
| **AFRC** | Australian Fenestration Rating Council |
| **Assessed floor area** | the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents. |
| **Ceiling penetrations** | features that require a penetration to the ceiling, including downlights, vents, exhaust fans, range hoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts. |
| **Conditioned** | a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages. |
| **COP** | Coefficient of performance |
| **Custom windows** | windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating. |
| **Default windows** | windows that are representative of a specific type of window product and whose properties have been derived by statistical methods. |
| **EER** | Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input |
| **Energy use** | This is your homes rating without solar or batteries. |
| **Energy value** | The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard). |
| **Entrance door** | these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. |
| **Exposure category – exposed** | terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). |
| **Exposure category – open** | terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). |
| **Exposure category – suburban** | terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. |
| **Exposure category – protected** | terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas. |
| **Horizontal shading feature** | provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. |
| **National Construction Code (NCC) Class** | the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. |
| **Net zero home** | a home that achieves a net zero energy value*. |
| **Opening percentage** | the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. |
| **Provisional value** | an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au |
| **Recommended capacity** | this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person. |
| **Reflective wrap (also known as foil)** | can be applied to walls, roofs and ceilings. When combined with an appropriate air gap and emissivity value, it provides insulative properties. |
| **Roof window** | for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. |
| **Shading features** | includes neighbouring buildings, fences, and wing walls, but excludes eaves. |
| **Solar heat gain coefficient (SHGC)** | the fraction of incident solar radiation admitted through a window, both directly transmitted as well as 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. |
| **Skylight (also known as roof lights)** | for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. |

*Refer to glossary.

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| **STCs** | Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory |
| **Thermal breaks** | are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels. |
| **U-value** | the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. |
| **Unconditioned** | a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions. |
| **Vertical shading features** | provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). |
| **Window shading device** | a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies) |

*Refer to glossary.