

## NCC ENERGY EFFICIENCY PROTOCOL AND SOFTWARE FOR HOUSING

### PROTOCOL FOR RATING SOFTWARE

Compliance with the *Deemed-to-Satisfy* energy efficiency provisions of the NCC can be achieved using thermal modeling software and load limits for the climate zone specified in the ABCB standard *NatHERS heating and cooling load limits*. The NatHERS compliance pathway requires a building to achieve a minimum star rating and satisfy corresponding heating and cooling load limits.

The software used must follow the *Nationwide House Energy Rating Scheme (NatHERS) - Software Accreditation Protocol*. Various software tools that follow this protocol are available. Software tools have three essential parts:

- Input fields to describe the building layout and materials.
- Calculators to assess thermal performance.
- Reporting of calculated results and the star rating.

All these software tools use the same thermal calculation engine, developed by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) for the Ministerial Council on Energy (MCE).

Whilst anyone may purchase and use the software, only an assessor accredited by the Association of Building Sustainability Assessors (ABSA) can issue rating certificates. Many States and Territories mandate that reports created by this software accompany Development Applications.

### RATING SOFTWARE

**AccuRate Sustainability** uses an interface offering a wide selection of construction types and design features. Features include improved natural ventilation modeling, user-defined construction, improved modeling of roof spaces, sub-floor spaces, skylights and horizontal reflective air gaps, and the availability of many more zones. It provides comprehensive data including local climate specifications, modeling houses in every State and Territory, and integrates with Windows Energy Rating Scheme (WERS). AccuRate is used as the benchmark for accrediting other HERS (House Energy Rating Software) for use with the NCC requirements.



**Building energy rating scheme (BERS) Pro** has a graphic based interface, and simulates and analyses thermal performance of houses in all climates, from alpine to tropical. BERS Pro allows the assessor to select natural or mechanical cooling and can assess the performance of several natural ventilation options. BERS Pro is most used in Queensland, but may also be used for assessment in other States. It applies to new houses and additions. BERS Pro is second generation software based on the AccuRate calculation engine.



**FirstRate5** assesses the energy efficiency of housing design proposals and completed dwellings. Results suggest options for optimizing energy efficiency, making it useful as a design tool. It can be used for new houses, multi-unit housing and alterations, but does not model multi-zone buildings. FirstRate5 is based on the AccuRate calculation engine.



**Home Energy Rating and Optimisation (HERO)** has a dual visual and data-grid interface. It includes default libraries for construction assembly types and information from the Window Energy Rating Scheme (WERS) window database. It has the functionality to calculate heating and cooling load limit cap, generate area summaries and export the results into other formats. It can be used to model new and existing houses and multi-unit housing.



**BASIX** (Building Sustainability Index), currently only mandated in NSW, is a web-based assessment and certification tool that measures the potential performance of dwellings against sustainability indices. It is a robust, sustainable planning measure, intended to deliver equitable and effective water and greenhouse gas reductions. BASIX is the mandatory certification method for all new houses and additions in NSW, overriding NCC energy efficiency provisions other than Part H6 as varied by the NSW Appendix. However, there are provisions within BASIX for alternative assessment by an Accredited Assessor using approved software.



**ACTHERS** (ACT House Energy Rating Scheme), is based on the FirstRate5 program and produces an EER (Energy Efficiency Rating) statement. It applies to all new houses and additions in the ACT.



### ENERGY EFFICIENCY PROVISIONS IN NATSPEC

NATSPEC uses NCC *Deemed-to-Satisfy* provisions where possible but most factors influencing star rating performance involve design decisions. NATSPEC enables specifiers to incorporate design decisions and performance commitments into the specification. For example, windows will be shown on the drawings, but NATSPEC allows values for window and glass performance to be entered in the worksection schedules.

### Websites

**Nationwide House Energy Rating Scheme (NatHERS)**  
[www.nathers.gov.au](http://www.nathers.gov.au)

**ACT**  
[www.planning.act.gov.au](http://www.planning.act.gov.au)

**NSW**  
[www.planningportal.nsw.gov.au/basix](http://www.planningportal.nsw.gov.au/basix)

**NT**  
[www.nt.gov.au](http://www.nt.gov.au)

**QLD**  
[www.environment.des.qld.gov.au](http://www.environment.des.qld.gov.au)

**SA**  
[www.dpti.sa.gov.au](http://www.dpti.sa.gov.au)

**TAS**  
[www.cbos.tas.gov.au](http://www.cbos.tas.gov.au)

**VIC**  
[www.sustainability.vic.gov.au](http://www.sustainability.vic.gov.au)

**WA**  
[www.commerce.wa.gov.au](http://www.commerce.wa.gov.au)

**Energy efficiency ratings software:**

**AccuRate Sustainability**  
[www.energyinspection.com.au](http://www.energyinspection.com.au)

**BERS Pro**  
[www.energyinspection.com.au](http://www.energyinspection.com.au)

**FirstRate5**  
[www.fr5.com.au](http://www.fr5.com.au)

**HERO**  
[www.hero-software.com.au](http://www.hero-software.com.au)

**Other relevant sites:**

**ABSA**  
[www.absa.net.au](http://www.absa.net.au)

**NCC**  
[www.abcb.gov.au](http://www.abcb.gov.au)

**Sustainability Victoria**  
[www.sustainability.vic.gov.au](http://www.sustainability.vic.gov.au)

**Your Home**  
[www.yourhome.gov.au](http://www.yourhome.gov.au)

**Relevant documents**  
 NCC - BCA Volume One and Volume 2.

NATSPEC TECHnote DES 014  
*Environmental rating schemes for buildings.*

NATSPEC TECHnote DES 016  
 NCC - BCA Volume Two: Energy efficiency provisions.

### Relevant worksections

- 042 Roofing subgroup
- 043 Cladding subgroup
- 045 Doors and windows subgroup
- 046 Glass subgroup
- 047 Insulation subgroup
- 07 Mechanical workgroup
- 08 Hydraulic workgroup
- 09 Electrical workgroup