

BCA ENERGY EFFICIENCY PROTOCOL AND SOFTWARE FOR HOUSING

PROTOCOL FOR RATING SOFTWARE

Compliance with the energy efficiency provisions of the BCA can be achieved either through the use of *deemed-to-satisfy* provisions or by verifying a building's performance with thermal modeling software. State and territory variations apply. The software used must follow the Australian Building Code Board (ABCB) Protocols for House Energy Rating Software. Various software tools that follow this protocol, and are accredited under the Nationwide House Energy Rating Scheme (NatHERS), 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).

The current accepted version of NatHERS software is **AccuRate**. Reports generated by this software are claimed to allow more accurate modeling of building thermal performance. Whilst anyone may purchase and use the software, only an assessor accredited by the Association of Building Sustainability Assessors (ABSA) is allowed to issue rating certificates. Many states and territories mandate that reports created by this software accompany DA submissions.

RATING SOFTWARE

AccuRate uses an interface offering a wider selection of construction types and design features than earlier tools. Claimed feature improvements 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 BCA requirements. AccuRate can rate good design above 6 stars.



Building energy rating scheme (BERS) has a graphic based interface, and simulates and analyses thermal performance of houses in all climates, from alpine to tropical. BERS allows the assessor to select either natural or mechanical cooling and can assess the performance of a number of natural ventilation options. BERS is most commonly 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.



FirstRate assesses the energy efficiency of housing design proposals and completed homes. 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.



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 BCA energy efficiency provisions other than Part 2.6 and Part 3.12 of BCA 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 the *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 window and glass performance to be entered in the worksection Schedules.

Websites

Nationwide House Energy Rating Scheme (NatHERS)
www.nathers.gov.au/

ACT
www.actpla.act.gov.au/

NSW
www.basix.nsw.gov.au/

NT
www.nt.gov.au/

QLD
www.climatesmart.qld.gov.au/

SA
www.dtei.sa.gov.au/

TAS
www.dier.tas.gov.au/

VIC
www.sustainability.vic.gov.au/

WA
www.clean.energy.wa.gov.au/

Energy efficiency ratings software:

AccuRate
www.hearne.com.au/

www.johnballinger.com/

BERS Pro
www.solarlogic.com.au/

FirstRate5
www.sustainability.vic.gov.au/

Other relevant sites:

BCA
www.abcb.gov.au/

ABSA
www.absa.net.au/

Energy smart home
www.energysmart.com.au/

Your Home Technical Manual – 1.5 Rating Tools
.yourhome.gov.au/technical/

Relevant documents

BCA

Relevant worksections

042 *Roofing worksections*
043 *Cladding worksections*
0451 *Windows and glazed doors*
0453 *Doors and access panels*
0461 *Glazing*
0471 *Insulation and sarking membranes*
07 *Mechanical worksections*
08 *Hydraulic worksections*
09 *Electrical worksections*