

## Energuide Rating System for New Homes

### PURPOSE

This variance has been developed to acknowledge equivalencies between Article 9.36.5. energy modeling requirements and the EnerGuide Rating System version 15 (ERS v15) for homes.

### DISCUSSION

The EnerGuide Rating System is a national system managed by Natural Resources Canada (NRCAN) in collaboration with its regional partners for the purpose of assessing and depicting the energy performance of houses.

According to NRCAN, the rating system is designed to:

- Help Canadian homeowners, industry and stakeholders, become “energy literate” regarding homes and the decisions related to them;
- Provide specific, readily accessible energy performance information that is widely used to support decision making in designing, constructing, purchasing, renovating or operating a home; and
- Facilitate energy performance advancements in new and existing low-rise housing sectors by encouraging home builders and homeowners to improve the houses that they live in, build or renovate. This should lower operating costs, increase occupant comfort and reduce the environmental impact of housing energy use in Canada.

While there are several energy modeling software programs available to demonstrate compliance with the Alberta Building Code 2014 (ABC 2014) Subsection 9.36.5, ERS v15 is approximately equivalent to ABC 2014 Subsection 9.36.5 modeling requirements. Previous ERS versions were not accepted for use in Alberta because equivalency with ABC 2014 Subsection 9.36.5 could not be substantiated.

Allowing for ERS v15 certification as a compliance path aligns with the Alberta Climate Leadership Plan and The Pan-Canadian Framework on Clean Growth and Climate Change goals of labelling building energy use and streamlining the energy code verification process.

### CODE REFERENCES

Sentence 9.36.1.3(1). states:

#### 9.36.1.3. Compliance and Application

- 1) Except as provided in sentences (2) to (5) buildings shall comply with
  - a) the prescriptive or trade off requirements in Subsections 9.36.2 to 9.36.4,
  - b) the performance requirements in Subsection 9.36.5., or
  - c) the NECB

Unless stated otherwise, all Code references in this STANDATA are to Division B of the Alberta Building Code 2014.

Issue of this STANDATA is authorized by  
the Provincial Building Administrator

*[Original Signed]*  
Paul Chang

The logo for the Alberta Government, featuring the word "Alberta" in a large, stylized, grey script font, with a small blue square to the right of the letter "a". Below "Alberta" is the word "Government" in a smaller, blue, sans-serif font.

Article 9.36.5.1. states:

**9.36.5.1. Scope and Application**

- 1) This Subsection is concerned with modeling the energy performance of components, systems and assemblies, including heat gains from internal loads described in Sentence 9.36.5.4.(4), that are addressed in the scope of the prescriptive requirements in Subsections 9.36.2. to 9.36.4. and that are installed in *buildings* described in Sentence 9.36.1.3.(3).
- 2) Internal loads other than those described in Sentence 9.36.5.4.(4) shall be excluded from the performance compliance calculations as they relate to
  - a) the lighting of unconditioned spaces,
  - b) exterior lighting, and
  - c) the ventilation of unconditioned spaces.

Article 9.36.5.3 states:

**9.36.5.3. Compliance**

- 1) The performance compliance calculations shall determine
  - a) the annual energy consumption of the proposed house, and
  - b) the house energy target of a reference house.
- 2) The annual energy consumption of the proposed house shall not exceed the house energy target of the reference house. (See Appendix A.)
- 3) In establishing the house energy target, *building* components, systems and assemblies shall be accounted for in accordance with the prescriptive requirements of Subsections 9.36.2. to 9.36.4. for the climate zone under consideration.
- 4) In establishing the annual energy consumption, *building* components, systems and assemblies that are addressed in the scope of the prescriptive requirements of Subsections 9.36.2. to 9.36.4. shall be accounted for, for the climate zone under consideration.
- 5) Where the construction techniques or *building* components, systems or assemblies used are more energy-efficient than those prescribed by the prescriptive requirements, the performance compliance calculations are permitted to take this increased performance level into account in the determination of the annual energy consumption, provided it can be quantified and is not dependent on occupant interaction.
- 6) Both the proposed and reference houses shall be modeled using the same climatic data, *soil* conditions, operating schedules in Article 9.36.5.4. and temperature set-points.

**VARIANCE**

This variance provides approximately equivalent or greater safety performance with respect to persons and property as that provided for by the Safety Codes Act.

In addition to the ABC 2014 clause 9.36.1.3.(1)(b) acceptable performance path, the use of a ERS v15 for compliance is deemed acceptable subject to the following conditions:

**Conditions for compliance using ERS v15:**

- Annual energy savings of  $\geq 5\%$  over the ERS v15 reference case as indicated by EnerGuide Rating System Label (Electric Baseloads for both the Reference and Proposed house may be excluded from calculations).
- Applies only to single detached, semi-detached, row houses, and houses with secondary suites. (Does not apply to stacked units or joined units by a common space).

- Annual energy saving calculations are based on Rated Annual Energy Consumption and excludes any on-site renewable energy contribution.
- Reduction in process/plug loads is not permitted in modeling.

The following shall be submitted to the authority having jurisdiction prior to occupancy:

- Drawings including envelope assemblies and air barrier details. Effective RSI values may be calculated by HOT2000 internal codes while following NRCan procedures rather than by a detailed RSI assembly drawing for each assembly.
- HOT2000 Modeling reports for a House with Standard Operating Conditions performed by NRCan qualified Energy Advisor.
- A blower door test report.
- Certification in the form of an EnerGuide Label and Home Owner Information Sheet (HOIS) approved by NRCan.

This VARIANCE is applicable throughout the province of Alberta.