

# ANSI/RESNET/ ICC 301-2014

## Standard for the Calculation and Labeling of the Energy Performance of Low-Rise Residential Buildings using an Energy Rating Index

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American National Standard



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## **Standard for the Calculation and Labeling of the Energy Performance of Low-Rise Residential Buildings using an Energy Rating Index**

American National Standard

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*This second publication of the Standard integrates editorial changes identified in the  
amendment proceeding for ANSI/RESNET/ICC 301-2014 Addendum B-2015 including the  
Standard's designation and title changes approved on November 17, 2015, by the RESNET  
Standards Management Board*

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### **SPECIAL NOTE**

This ANSI/RESNET/ICC Standard is a voluntary consensus standard developed under the auspices of the Residential Energy Services Network (RESNET) in accordance with RESNET's *Standards Development Policy and Procedures Manual*, Version 1.1, January 2, 2012. RESNET is an American National Standards Institute (ANSI) Accredited Standards Developer. Consensus is defined by ANSI as "substantial agreement reached by directly and materially affected interest categories". This signifies the concurrence of more than a simple majority but not necessarily unanimity. Consensus requires that all views and objections be considered, and that an effort be made toward their resolution. Compliance with this standard is voluntary until and unless a legal jurisdiction makes compliance mandatory.

RESNET obtains consensus through participation of its national members, associated societies, and public review.

The first publication of this standard was designated and titled ANSI/RESNET 301-2014 Standard for the Calculation and Labeling of the Energy Performance of Low-Rise Residential Buildings using the HERS Index. The designation and title were changed to ANSI/RESNET/ICC 301-2014 Standard for the Calculation and Labeling of the Energy Performance of Low-Rise Residential Buildings using an Energy Rating Index as noted in the amendment proceeding for ANSI/RESNET/ICC 301-2014 Addendum B-2015. This

second publication of the Standard incorporates the designation and title changes and other non-substantive editorial changes to the first publication.

This Standard is under continuous maintenance. In accordance with Section 10.9 of the *RESNET Standard Development Policy and Procedures Manual*, continuous maintenance proposals should be submitted to the Manager of Standards.

The Manager of Standards should be contacted for:

- a. Interpretation of the contents of this Standard
- b. Participation in the next review of the Standard
- c. Offering constructive criticism for improving the Standard
- d. Permission to reprint portions of the Standard

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## ANSI/RESNET/ICC 301-2014

### Standard for the Calculation and Labeling of the Energy Performance of Low-Rise Residential Buildings using an Energy Rating Index

#### Forward (Informative)

This Standard provides a consistent, uniform methodology for evaluating and labeling the energy performance of residences. The methodology compares the energy performance of an actual home with the energy performance of a reference home of the same geometry, resulting in a relative energy rating called the Energy Rating Index. Where the energy performance of the actual home and the reference home are equal, the Energy Rating Index is 100 and where the actual home requires no net purchased energy annually, the Energy Rating Index is 0 (zero).

The Energy Rating Reference Home used for this comparative analysis has the energy attributes of the 2006 International Energy Conservation Code (IECC) *Standard Reference Design*. Thus, the Energy Rating Index is relative to the minimum building energy efficiency requirements of the 2006 IECC. As a result, the Energy Rating Reference Home performance will not comport with state or local building codes that differ in stringency from the 2006 IECC. Where local building energy codes are less stringent than the 2006 IECC, the Energy Rating Index for the local standard will be greater than 100 and where local building energy codes that are more stringent than the 2006 IECC, the Energy Rating Index for the local standard will be less than 100. Because the Energy Rating Index score accounts for all lighting, appliances and miscellaneous energy loads, there is never a 1-to-1 correspondence between code compliance (even under the 2006 IECC) and an Energy Rating Index score of 100.

This Standard contains both normative and informative material. The body of the Standard is normative and must be complied with to conform to the Standard. Informative materials are not mandatory and are limited to this forward, footnotes, references and annexes, all of which are clearly marked as informative.

The designation and title of this Standard were revised effective November 17, 2015. The original designation, "ANSI/RESNET 301-2014", was revised to "ANSI/RESNET/ICC 301-2014". The title, "Standard for the Calculation and Labeling of Low-Rise Residential Buildings using the HERS Index", was revised to "Standard for the Calculation and Labeling of Low-Rise Residential Buildings using the Energy Rating Index". All references to "HERS" within the Standard were revised to "Energy Rating". The change in designation adds recognition of the International Code Council (ICC) as a sponsor of the Standard. Non-substantive editorial changes to ANSI/RESNET 301-2014 noted in the amendment proceeding for ANSI/RESNET/ICC 301-2014 Addendum B-2015 and in the "Special Note" above are published in this edition.

**1. Purpose.** The provisions of this document establish residential energy rating and labeling Standards, consistent with the provisions of the Energy Policy Act of 1992, which provides for uniformity and consistency in the rating and labeling of such buildings.

**2. Scope.** This standard is applicable to all one- and two-family dwellings and to dwelling units in residential buildings not over three stories in height above grade containing multiple dwelling units.

**3. Definitions.** The following terms and acronyms have specific meanings as used in this Standard. In the event that definitions given here differ from definitions given elsewhere, the definitions given here shall govern.<sup>1</sup>

**3.1. General.** Unless stated otherwise, the terms and words in Section 3.2 shall have the meanings indicated therein. Words used in the present tense include the future, words in the masculine gender include the feminine and neuter, and singular and plural are interchangeable. Terms not defined in Section 3.2 shall have ordinary accepted meanings the context implies.

### **3.2. Definitions.<sup>A</sup>**

*Note<sup>A</sup>: ANSI/RESNET 301-2014 Addendum A-2015 Domestic Hot Water Systems adds definitions. Addenda located at <http://www.resnet.us/blog/resnet-consensus-standards/>*

**Air Source Heat Pump (ASHP)** – Vapor compression heating and cooling equipment that uses the outdoor air as the heat source or sink for heat (see also Heat pump).

**Annual Fuel Utilization Efficiency (AFUE)** –a measure of the efficiency of gas or oil fired furnaces and boilers calculated as the furnace heating energy output divided by fuel energy input. AFUE does not include electrical energy for fans, or electronic ignition systems (see also Electric Auxiliary Energy).

**Approved** – shall mean approved by an entity adopting and requiring the use of this Standard as a result of investigation and tests conducted by the entity or by reason of accepted principles or tests by nationally recognized organizations.

**Approved Rating Provider** – An approved entity responsible for the certification of home energy raters working under its auspices and who is responsible for the quality assurance of such Certified Raters and for the quality assurance of home energy ratings produced by such home energy raters.

**Approved Software Rating Tool<sup>2</sup>** – A computerized procedure that is approved for the purpose of conducting home energy ratings and calculating the annual energy consumption, annual energy costs and an Energy Rating Index for a home.

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<sup>1</sup> (Informative Note) Additional definitions and acronyms common to all aspects of Energy Rating Systems can be found in Appendix B of the *Mortgage Industry National Home Energy Rating Systems Standards*.

<sup>2</sup> (Informative Note) A list of software rating tools meeting the requirements of RESNET Publication No. 13-002 and approved by RESNET is online at [http://www.resnet.us/professional/programs/energy\\_rating\\_software](http://www.resnet.us/professional/programs/energy_rating_software).