



Adopted Enhancements to the Mortgage Industry National Home Energy Rating Standards

Adopted by the National Association of State Energy Officials and Residential Energy
Service Network's Rating Standards Revision Committee

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Amendment REF: 2004–01 Amending the Rating Reference Home

Chapter 3.B.4. – Replace Sections B.4 in it entirety with the following:

B.4. Calculation Procedure.

- a. **General.** Except as specified by this Section, the HERS Reference Home and Rated Home shall be configured and analyzed using identical methods and techniques.
- b. **Residence Specifications.** The HERS Reference Home and Rated Home shall be configured and analyzed as specified by Table 3.

Table 3. Specifications for the HERS Reference and Rated Homes

<u>Building Component</u>	<u>HERS Reference Home</u>	<u>Rated Home</u>
<u>Above grade walls:</u>	<u>Type: wood frame</u> <u>Gross area: Same a Rated Home</u> <u>U-Factor: from Table 4</u> <u>Solar absorptance = 0.75</u> <u>Emittance = 0.90</u>	<u>Same as Rated Home</u> <u>Same as Rated Home</u> <u>Same as Rated Home</u> <u>Same as Rated Home</u> <u>Same as Rated Home</u>
<u>Basement and crawlspace walls:</u>	<u>Type: same as Rated Home</u> <u>Gross area: same as Rated Home</u> <u>U-Factor: from Table 4 with the insulation layer on the interior side of walls</u>	<u>Same as Rated Home</u> <u>Same as Rated Home</u> <u>Same as Rated Home</u>
<u>Floors over unconditioned spaces:</u>	<u>Type: wood frame</u> <u>Gross area: same as Rated Home</u> <u>U-Factor: from Table 4</u>	<u>Same as Rated Home</u> <u>Same as Rated Home</u> <u>Same as Rated Home</u>
<u>Ceilings:</u>	<u>Type: wood frame</u> <u>Gross area: same as Rated Home</u> <u>U-Factor: from Table 4</u>	<u>Same as Rated Home</u> <u>Same as Rated Home</u> <u>Same as Rated Home</u>
<u>Roofs:</u>	<u>Type: composition shingle on wood sheathing</u> <u>Gross area: same as Rated</u>	<u>Same as Rated Home</u> <u>Same as Rated Home</u>

Building Component	<u>HERS Reference Home</u>	<u>Rated Home</u>
	<u>Home</u> <u>Solar absorptance = 0.75</u> <u>Emittance = 0.90</u>	<u>Same as Rated Home</u> <u>Same as Rated Home</u>
<u>Attics:</u>	<u>Type: vented with aperture = 1ft² per 300 ft² ceiling area</u>	<u>Same as Rated Home</u>
<u>Foundations:</u>	<u>Type: same as Rated Home</u> <u>Gross Area: same as Rated Home</u> <u>U-Factor/R-value: from Table 4</u>	<u>Same as Rated Home</u> <u>Same as Rated Home</u> <u>Same as Rated Home</u>
<u>Doors:</u>	<u>Area: 40 ft²</u> <u>Orientation: North</u> <u>U-factor: same as fenestration from Table 4</u>	<u>Same as Rated Home</u> <u>Same as Rated Home</u> <u>Same as Rated Home</u>
<u>Glazing:</u> ^(a)	<u>Total area ^(b) = 18% of conditioned floor area</u> <u>Orientation: equally distributed to four (4) cardinal compass orientations (N,E,S,&W)</u> <u>U-factor: from Table 4</u> <u>SHGC: from Table 4</u> <u>Interior shade coefficient:</u> <u>Summer = 0.70</u> <u>Winter = 0.85</u> <u>External shading: none</u>	<u>Same as Rated Home</u> <u>Same as Rated Home</u> <u>Same as Rated Home</u> <u>Same as Rated Home</u> <u>Same as HERS Reference Home ^(c)</u> <u>Same as Rated Home</u>
<u>Skylights</u>	<u>None</u>	<u>Same as Rated Home</u>
<u>Thermally isolated sunrooms</u>	<u>None</u>	<u>Same as Rated Home</u>
<u>Air exchange rate</u>	<u>Specific Leakage Area (SLA) ^(d) = 0.00048 assuming no energy recovery</u>	<u>For residences that are not tested, the same as the HERS Reference Home</u> <u>For residences without mechanical ventilation that are tested in accordance with ASHRAE Standard 119, Section 5.1, the measured air exchange</u>

<u>Building Component</u>	<u>HERS Reference Home</u>	<u>Rated Home</u>
		<u>rate^(e) but not less than 0.35 ach.</u> <u>For residences with mechanical ventilation that are tested in accordance with ASHRAE Standard 119, Section 5.1, the measured air exchange rate^(e) combined with the mechanical ventilation rate,^(f) which shall not be less than 0.01 x CFA + 7.5 x (Nbr+1).</u>
<u>Mechanical ventilation:</u>	<u>None, except where mechanical ventilation is specified by the Rated Home, in which case:</u> <u>Annual vent fan energy use:</u> <u>kWh/yr = 0.03942*CFA + 29.565*(N_{br}+1)</u> <u>where:</u> <u>CFA = conditioned floor area</u> <u>N_{br} = number of bedrooms</u>	<u>Same as Rated Home</u>
<u>Internal gains:</u>	<u>IGain = 17,900 + 23.8*CFA + 4104*N_{br} (Btu/day per dwelling unit)</u>	<u>Same as HERS Reference Home (see also Chapter 3.B.6.b.(3) for adjustments by the proposed amendment EXP: 2004-01 “Incorporating Lighting, Appliance, and On-Site Energy Production in the Rating Score “</u>
<u>Internal mass:</u>	<u>An internal mass for furniture and contents of 8 pounds per square foot of floor area.</u>	<u>Same as HERS Reference Home, plus any additional mass specifically designed as a Thermal Storage Element^(g) but not integral to the building envelope or structure.</u>
<u>Structural mass:</u>	<u>For masonry floor slabs, 80% of floor area covered by R-2 carpet and pad, and 20% of floor directly exposed to room air;</u>	<u>Same as Rated Home</u>

<u>Building Component</u>	<u>HERS Reference Home</u>	<u>Rated Home</u>
	<p><u>For masonry basement walls, as Rated Home, but with insulation required by Table 4 located on the interior side of the walls;</u></p> <p><u>For other walls, for ceilings, floors, and interior walls, wood frame construction.</u></p>	<p><u>Same as Rated Home</u></p> <p><u>Same as Rated Home</u></p>
<u>Heating systems</u> ^{(h),(i)}	<p><u>Fuel type: same as Rated Home</u></p> <p><u>Efficiencies:</u></p> <p><u>Electric: air source heat pump with prevailing federal minimum efficiency</u></p> <p><u>Non-electric furnaces: natural gas furnace with prevailing federal minimum efficiency</u></p> <p><u>Non-electric boilers: natural gas boiler with prevailing federal minimum efficiency</u></p> <p><u>Capacity: sized in accordance with proposed amendment</u></p> <p><u>TECH: 2004-13.</u></p>	<p><u>Same as Rated Home</u> ⁽ⁱ⁾</p> <p><u>Same as Rated Home</u></p> <p><u>Same as Rated Home</u></p> <p><u>Same as Rated Home</u></p> <p><u>Same as Rated Home</u></p>
<u>Cooling systems</u> ^{(h),(k)}	<p><u>Fuel type: Electric</u></p> <p><u>Efficiency: in accordance with prevailing federal minimum standards</u></p> <p><u>Capacity: sized in accordance with proposed TECH: 2004-13.</u></p>	<p><u>Same as Rated Home</u> ^(k)</p> <p><u>Same as Rated Home</u></p> <p><u>Same as Rated Home</u></p>
<u>Service water heating systems</u> ^{(h),(m)}	<p><u>Fuel type: same as Rated Home</u></p> <p><u>Efficiency: in accordance with prevailing federal minimum standards</u></p>	<p><u>Same as Rated Home</u> ^(m)</p> <p><u>Same as Rated Home</u></p>

Building Component	<u>HERS Reference Home</u>	<u>Rated Home</u>
	<u>Use (gal/day): $30 \cdot N_{du} + 10 \cdot N_{br}$</u> <u>where N_{du} = number of dwelling units</u> <u>Tank temperature: 120 F</u>	<u>Same as HERS Reference Home</u> <u>Same as HERS Reference Home</u>
<u>Thermal distribution systems:</u>	<u>A thermal distribution system efficiency (DSE) of 0.80 shall be applied to both the heating and cooling system efficiencies.</u>	<u>As specified by Table 5, except when tested in accordance with ASHRAE Standard 152-2004⁽ⁿ⁾ and then either calculated through hourly simulation, or calculated in accordance with ASHRAE Standard 152-2004.</u>
<u>Thermostat</u>	<u>Type: manual, cooling temperature set point = 78 F; heating temperature set point = 68 F</u>	<u>Same as Rated Home</u>

Notes:

- (a) Glazing shall be defined as sunlight-transmitting fenestration, including the area of sash, curbing or other framing elements, that enclose conditioned space. Glazing includes the area of sunlight-transmitting fenestration assemblies in walls bounding conditioned basements. For doors where the sunlight-transmitting opening is less than 50% of the door area, the glazing area is the sunlight transmitting opening area shall be used. For all other doors, the glazing area is the rough frame opening area for the door including the door and the frame.

- (b) For homes with conditioned basements and for multi-family attached homes the following formula shall be used to determine total window area:

$$A_F = 0.18 \times A_{FL} \times F_A \times F$$

where:

A_F = Total fenestration area.

A_{FL} = Total floor area of directly conditioned space.

F_A = (Above grade thermal boundary gross wall area)/(above grade boundary wall area + 0.5 x below grade boundary wall area).

F = (Above grade thermal boundary wall area)/(above grade thermal boundary wall area + common wall area) or 0.56, whichever is greater.

and where:

Thermal boundary wall is any wall that separates conditioned space from unconditioned space or ambient conditions.

Above grade thermal boundary wall is any thermal boundary wall component not in contact with soil.

Below grade boundary wall is any thermal boundary wall in soil contact.

Common wall is the total wall area of walls adjacent to another conditioned living unit, not including foundation walls.

- (c) For fenestrations facing within 15 degrees of due south that are directly coupled to thermal storage mass, the winter interior shade coefficient shall be permitted to be increased to 0.95 in the Rated Home.
- (d) Where Leakage Area (L) is defined in accordance with Section 5.1 of ASHRAE Standard 119 and where:
 $SLA = L / CFA$ (where L and CFA are in the same units).
Either hourly calculations using the procedures given in the 2001 ASHRAE Handbook of Fundamentals, Chapter 26, page 26.21, equation 40 (Sherman-Grimsrud model) or calculations yielding equivalent results shall be used to determine the energy loads resulting from air exchange.
- (e) Tested envelope leakage shall be determined and documented by a Certified Rater using the on-site inspection protocol as specified in Appendix A under "Blower Door Test". Either hourly calculations using the procedures given in the 2001 ASHRAE Handbook of Fundamentals, Chapter 26, page 26.21, equation 40 (Sherman-Grimsrud model) or calculations yielding equivalent results shall be used to determine the energy loads resulting from air exchange.
- (f) The combined air exchange rate for infiltration and mechanical ventilation shall be determined in accordance with equation 43 of 2001 ASHRAE Handbook of Fundamentals page 26.24 in combination with the "Whole-house Ventilation" provisions of 2001 ASHRAE Handbook of Fundamentals, page 26.19 for intermittent mechanical ventilation.
- (g) Thermal Storage Element shall mean a component not normally part of the floors, walls or ceilings that is part of a passive solar system, and that provides thermal storage such as enclosed water columns, rock beds, or phase change containers. A thermal storage element must be in the same room as fenestration that faces within 15 degrees of due south, or must be connected to such a room with pipes or ducts that allow the element to be actively charged.
- (h) For a Rated Home with multiple heating, cooling or water heating systems using different fuel types, then the applicable system capacities and fuel types shall be weighted in accordance with the loads distribution (as calculated by accepted engineering practice for that equipment and fuel type) of the subject multiple systems. For the HERS Reference Home, the prevailing federal minimum efficiency shall be assumed except that the efficiencies given in Table 3a below will be assumed when:
 1. A type of device not covered by NAECA is found in the Rated Home;
 2. The Rated Home is heated by electricity using a device other than an air source heat pump; or
 3. The Rated Home does not contain one or more of the required HVAC equipment systems.

Table 3a. Default HERS Reference Home Heating and Cooling Equipment Efficiencies

<u>Rated Home Fuel</u>	<u>Function</u>	<u>Reference Home Device</u>
<u>Electric</u>	<u>Heating</u>	<u>6.8 HSPF Air Source Heat Pump</u>

<u>Rated Home Fuel</u>	<u>Function</u>	<u>Reference Home Device</u>
<u>Non Electric Warm Air Furnace or Space Heater</u>	<u>Heating</u>	<u>78% AFUE Gas Furnace</u>
<u>Non Electric Boiler</u>	<u>Heating</u>	<u>80% AFUE Gas Boiler</u>
<u>Any Type</u>	<u>Cooling</u>	<u>10 SEER Electric Air Conditioner</u>

- (i) For a Rated Home without a proposed heating system, a heating system with the prevailing federal minimum efficiency shall be assumed for both the HERS Reference Home and Rated Home. For electric heating systems the prevailing federal minimum efficiency air-source heat pump shall be selected.
- (k) For a Rated Home without a proposed cooling system, an electric air conditioner with the prevailing federal minimum efficiency shall be assumed for both the HERS Reference Home and the Rated Home.
- (m) For a Rated Home with a non-storage type water heater, a 40-gallon storage-type water heater with the prevailing federal minimum efficiency with the same fuel as the predominant heating fuel type shall be assumed for the HERS Reference Home. For a Rated Home without a proposed water heater, a 40-gallon storage-type water heater with the prevailing federal minimum efficiency with the same fuel as the predominant heating fuel type shall be assumed for both the Rated and HERS Reference Homes.
- (n) Tested duct leakage shall be determined and documented by a Certified Rater using the on-site inspection protocol as specified in Appendix A under "Air leakage (ducts)".

Table 4. Component Heat Transfer Characteristics for HERS Reference Home^(a)

<u>Climate Zone^(b)</u>	<u>Fenestration and Opaque Door U-Factor</u>	<u>Glazed Fenestration Assembly SHGC</u>	<u>Ceiling U-Factor</u>	<u>Frame Wall U-Factor</u>	<u>Floor Over Unconditioned Space U-Factor</u>	<u>Basement Wall U-Factor^(c)</u>	<u>Crawl Space U-Factor</u>	<u>Slab-on-Grade^(d,e) R-Value & Depth</u>
<u>1</u>	<u>1.20</u>	<u>0.40</u>	<u>0.035</u>	<u>0.082</u>	<u>0.064</u>	<u>0.360</u>	<u>0.477</u>	<u>0</u>
<u>2</u>	<u>0.75</u>	<u>0.40</u>	<u>0.035</u>	<u>0.082</u>	<u>0.064</u>	<u>0.360</u>	<u>0.477</u>	<u>0</u>
<u>3</u>	<u>0.65</u>	<u>0.40</u>	<u>0.035</u>	<u>0.082</u>	<u>0.047</u>	<u>0.360</u>	<u>0.136</u>	<u>0</u>
<u>4 except Marine</u>	<u>0.40</u>	<u>0.55</u>	<u>0.030</u>	<u>0.082</u>	<u>0.047</u>	<u>0.059</u>	<u>0.065</u>	<u>10, 2 ft.</u>
<u>5 and Marine 4</u>	<u>0.35</u>	<u>0.55</u>	<u>0.030</u>	<u>0.060</u>	<u>0.033</u>	<u>0.059</u>	<u>0.065</u>	<u>10, 2 ft.</u>
<u>6</u>	<u>0.35</u>	<u>0.55</u>	<u>0.026</u>	<u>0.060</u>	<u>0.033</u>	<u>0.059</u>	<u>0.065</u>	<u>10, 4 ft.</u>
<u>7 and 8</u>	<u>0.35</u>	<u>0.55</u>	<u>0.026</u>	<u>0.057</u>	<u>0.033</u>	<u>0.059</u>	<u>0.065</u>	<u>10, 4 ft.</u>

Notes:

- (a) Non-fenestration U-Factors shall be obtained from measurement, calculation or an approved source.
- (b) Climates zones shall be as specified by the DOE Residential IECC Code Change proposal (see http://www.energycodes.gov/implement/doe_2004_proposals.stm). (This link will be updated as soon as DOE Residential IECC Code Change proposal is posted.)
- (c) For basements where the conditioned space boundary comprises the basement walls.
- (d) R-5 shall be added to the required R-value for slabs with embedded heating.
- (e) Slab-on-grade insulation "depth" is considered valid in either the horizontal or the vertical direction.

Table 5. Default Distribution System Efficiencies for Rated Homes ^(a)

<u>Distribution System Configuration and Condition:</u>	<u>Forced Air Systems</u>	<u>Hydronic Systems ^(b)</u>
<u>Distribution system components located in unconditioned space</u>	<u>0.80</u>	<u>0.95</u>
<u>Distribution systems entirely located in conditioned space ^(c)</u>	<u>0.88</u>	<u>1.00</u>
<u>Proposed- “reduced leakage” with entire air distribution system located in the conditioned space ^(d)</u>	<u>0.96</u>	
<u>Proposed “reduced leakage” air distribution system with components located in the unconditioned space</u>	<u>0.88</u>	
<u>“Ductless” systems ^(e)</u>	<u>1.00</u>	

Notes:

- (a) Default values given by this table are for distribution systems as rated, which meet minimum IECC 2000 requirements for duct system insulation.
- (b) Hydronic Systems shall mean those systems that distribute heating and cooling energy directly to individual spaces using liquids pumped through closed loop piping and that do not depend on ducted, forced air flows to maintain space temperatures.
- (c) Entire system in conditioned space shall mean that no component of the distribution system, including the air handler unit or boiler, is located outside of the conditioned space boundary.
- (d) Proposed “reduced leakage” shall mean substantially leak free to be leakage of not greater than 3 cfm to outdoors per 100 square feet of conditioned floor area and not greater than 9 cfm total air leakage per 100 square feet of conditioned floor area at a pressure differential of 25 Pascal across the entire system, including the manufacturer’s air handler enclosure. Total air leakage of not greater than 3 cfm per 100 square feet of conditioned floor area at a pressure difference of 25 Pascal across the entire system, including the manufacturer’s air handler enclosure, shall be deemed to meet this requirement without measurement of air leakage to outdoors. This rated condition shall be specified as the required

performance in the construction documents and requires confirmation through field-testing of installed systems as documented by a Certified Rater.

- (e) Ductless systems may have forced airflow across a coil but shall not have any ducted airflows external to the manufacturer's air handler enclosure.

- c. **Renewable Energy Sources.** Insert TECH: 2004-07 here.
d. **Auxiliary Energy Use for Fossil Fuel Furnaces.** Insert amendment TECH: 2004-05 here.
e. **Heating Cooling and Ventilation Seasons.** Insert amendment TECH: 2004-08 here.
f. **Default Framing Fractions.** Insert TECH: 2004-11 here.

Modify Section B.5 as follows:

B.5. Minimum Rated Features

- a. All HERS providers shall calculate the estimated annual purchased energy consumption for heating, cooling and water heating set forth in Section B.1 of ~~these Guidelines~~ this Standard using the energy loss and gain associated with the minimum rated features set forth in Table ~~7~~ 6.
- b. For existing homes, the envelope thermal characteristics of building elements 1 through 7 set forth in Table ~~6~~ 7 are determined by site observation.
- c. If data for the minimum rated features set forth in paragraph (b) of this Section cannot be obtained by observation or without destructive disassembly of the home, all HERS providers shall use default values. The default values are determined from the following sources listed in the preferential order of use:
- (1) For manufactured homes, available manufacturer's data;
 - (2) Current and historical local building practices; or
 - (3) Current and historical local building codes.
- d. ~~Default values set forth in paragraph (c) of this section shall be established or approved by the accrediting body and be consistent for all HERS providers operating within a state.~~
- e. For existing homes, the determination of air leakage and duct leakage values set forth as building elements 10 and 11 in Table ~~6~~ 7 are determined by data collected on site using the following procedures listed in preferential order of use:
- (1) Current on-site diagnostic tests conducted in accordance with nationally accepted pressurization test standards the requirements set forth in Table 3; or
 - (2) Observations of the condition of the building and duct system made by HERS provider a Certified Rater. Based on these observations, values from Tables 3 and 5 shall be used. ~~will be ...~~
 - (3) The energy efficiency of the mechanical equipment set forth as building elements 12 through 14 in Table ~~6~~ 7 is determined by data collected on site using the following sources listed in preferential order of use:

- (a) Current on-site diagnostic test data as corrected using the following equation:

$$\text{Eff, rated} = \text{Eff, listed} * \text{Es, measured} / \text{Es, listed}$$

where:

Eff, rated = annual efficiency to use as input to the rating

Eff, listed = listed annual efficiency by manufacturer or directory

Es, measured = measured steady state efficiency of system

Es, listed = manufacturer's listed steady state efficiency, under the same operating conditions found during measurement

- (b) Name plate data;
(c) Manufacturer's data sheet; or
(d) Equipment directories.

~~f. If the Rated Home does not utilize at least one each heating, cooling and hot water system, the Reference Home equipment efficiencies as specified in section B.4.a(15) shall be assumed for the relevant missing system(s) in the Rated Home for the purposes of calculating the rating.~~

~~g. If the Rated Home utilizes multiple heating, cooling or hot water systems, the operating conditions specified in Section B.6 of these Guidelines shall be used for each system and the relevant purchased energy consumption calculations shall be appropriately weighed by system capacity in accordance with the loads distribution as calculated by accepted engineering practice for that equipment and fuel type.~~

f. If information on the energy efficiency of mechanical equipment cannot be determined from the sources listed in paragraph (3) of this section, the values set forth in Tables 7 and 8 shall be used.

g. Any HERS provider may base annual purchased energy consumption estimates for the Rated Home on additional features if the HERS provider's energy analysis tool is capable of doing so.

*Change table numbers for existing tables 7, 8, and 9 to 6, 7 and 8, respectively.
Modify all further table numbers accordingly.*

Modify Section B.6 as follows:

6. Operating condition assumptions.

~~a. Alternate operation conditions assumptions shall only be used where authorized by state law or regulation. Alternate operating condition assumptions shall be applied equally to both the Reference Home and the Rated Home and shall be consistent for all HERS providers operating within the state.~~

a. All HERS providers shall estimate the annual purchased energy consumption for heating, cooling and hot water for both the Rated Home and the Reference Home using the following assumptions.

- (1) Temperature control set points for heating and cooling of 68^o F and 78^o F, respectively;

- (2) Where programmable offsets are available in the Rated Home, 5°F 2°F temperature control point offsets with an 11 p.m. to 7 5:59 a.m. schedule for heating and a 9 a.m. to 3 2:59 p.m. schedule for cooling, and with no offsets assumed for the Reference Home;
- (3) ~~Internal heat gains from lights, people and equipment of 72,000 Btu/day for detached homes and 36,000 Btu/day for attached homes;~~
- (4) When calculating annual purchased energy for cooling, internal latent gains assumed as 0.20 times sensible internal heat gains;
- (5) ~~Estimated hot water usage based on Equation 7.~~
Equation 7: Gallons/day = 30 gallons + (10 gallons * number of bedrooms).
- (6) The climatologically most representative TMY2 or equivalent climate data and ASHRAE Standard 90.2 or equivalent Heating Degree Day (HDD) data, which may be interpolated between climate sites if interpolation is established or approved by the accrediting body and consistent for all HERS providers operating within a state.
- (7) Corrections for climate conditions and mis-sizing of equipment, using correction factors to HSPF, SEER and AFUE that are established or approved by the accrediting body and consistent for all HERS providers operating within a state.
- (8) Local residential energy or utility rates that—
 - (a) Are revenue-based and include customer service and fuel charges;
 - (b) Are updated at least annually; and
 - (c) Are confirmed by the accrediting body.

Insert new Section B.7 as follows and renumber all following Sections accordingly

B.7. Calculation Software Tools

- a. **Minimum capabilities.** Calculation procedures used to comply with this Section shall be computer-based rating software tools capable of calculating the annual energy consumption and rating score of all building elements that differ between the HERS Reference Home and the Rated Homes and shall include the following capabilities:
 - (1) Compliance with the rating provisions of Section B.1 of this Chapter.
 - (2) Computer generation of point scores and star ratings in accordance with the provisions of Section B.2 of this Chapter.
 - (3) Computer generation of the HERS Reference Home using only the input for the Rated Home.
 - (4) The calculation procedure shall not allow the user to directly modify the building component characteristics of HERS Reference Home.
 - (5) Calculation of whole-building, single-zone sizing for the heating and cooling equipment in the HERS Reference Home residence in accordance with Amendment TECH: 2004-16.
 - (6) Calculations that account for the indoor and outdoor temperature dependencies and the part load performance of heating, ventilating and air conditioning equipment based on climate and equipment sizing.
 - (7) Printed rating report in accordance with Section B.3 of this Chapter.
- b. **Approved tools.** Rating software tools shall be accredited by RESNET

through compliance with the “2004 RESNET Rating Software Testing and Verification Procedures” posted on the RESNET web site at www.natresnet.org. (see also Amendment ADMIN: 2004-02)

Modify Appendix A, “Air Leakage (Ducts) as follows

Appendix A, Building Element Heating and Cooling/Distribution System – Amend as follows;

Heating and Cooling/Distribution System

Air leakage (ducts)	Determine air leakage from ducts	<p>If diagnostic equipment is not used, consider location and characteristics of the distribution system to select standard default value.</p> <p><u>The application of ASHRAE Standard 152 for testing of ducted distribution systems shall be implemented with the following additions and exceptions:</u></p> <ol style="list-style-type: none"> <u>1. Air Handler Fan Flow Measurement using either of the methods specified in Annex A of the standard is preferred. If such measurement is not made, default values of 275 CFM per 12,000 btu/hour of nominal HVAC capacity shall be used. For fossil-fired furnace systems, a default value of 200 CFM for every 12,000 btu/hour of nominal furnace capacity shall be used for heating.</u> <u>2. Supply and return leakage may be determined by measuring the leakage of each side as in Annex B, or as an alternate the leakage of the entire system may be measured, with the duct pressurization device in the return and the duct-pressure probe in the supply side. The ratio of supply side leakage to return side leakage $Q_{25,s}$ to $Q_{25,r}$ shall be selected separately for heating and cooling based on a worst case determination. The supply side of the system shall be assigned 67% of the leakage and the return shall be assigned 33%, and the overall distribution efficiency determined; then the efficiency with the reverse conditions (67% return and 33% supply) shall be determined, and the lower of the two efficiencies will be applied.</u> <u>3. Total leakage (Annex C) . The limitation of applicability of Annex C (Section C1) to leakage measurement of 10% or less of air handler air flow shall be based on tested air flow or default air flow, as appropriate according to (1) above. The calculations of 2.5% of air flow in Section C1.1,2,</u>
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		<p><u>and 3 shall use tested air flow, or nominal air flow of 400 CFM per ton. If the register grilles are not installed during the test (C1.2), the 2.5% of fan flow added to the measured leakage may be waived, on condition that a visual inspection, verifying effective sealing of register boot-to-drywall and/or boot-to-subfloor connections, is conducted prior to issuing the final rating.</u></p>
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Amendment QA: 2004-01 – Rating Quality Assurance Procedures

Chapter 1.4.A. – Amend as follows:

4.A. Quality Assurance Designee

- 1. A home energy rating system shall designate an officer, employee, or contractor to be responsible for quality assurance within the organization. The responsibilities of the designee shall include:**
 - a. Maintenance of quality assurance files**
 - b. Review of ratings by rater trainees and during the probationary period**
 - c. Monitoring of ratings by certified raters**

- 2. The designated officer, employee, or contractor responsible for quality assurance shall demonstrate sufficient experience with the home energy rating system knowledge base and skills given in Section 5 of Chapter Two of the Standard to review the work of trainees and certified raters. Sufficient experience shall be demonstrated by either of the following:**
 - a. Certification as a Rater Trainer**
 - b. Passing the RESNET Quality Assurance Designee Test**

- 3. Proof of qualification shall be submitted with an application for accreditation.**

- 4. If the quality assurance designee leaves the home energy rating system, the provider shall have sixty (60) calendar days to notify RESNET of the new designated officer or employee, or be subject to suspension of the accreditation under the provisions of Chapter One, Section 9, Suspension and Revocation of Accreditation.**

4.B. Certification Standards

- 1. A rating provider shall provide documentation that their raters meet the rater certification provisions contained in Chapter Two of these standards.**

5. Rater Agreements

As a condition of rater certification, each provider shall ensure that a certified rater who has met the requirements of Chapter 2 Rater Training Requirements, has entered into a written agreement with the provider to provide home energy rating, field verification, and diagnostic services in compliance with these standards. A copy of the rater written agreement shall be provided to RESNET with the provider's accreditation application and within 60 days of making changes to the agreement. The written agreement shall at a minimum require raters to:

- a. Provide home energy rating and field verification services in compliance with these standards;
- b. Provide accurate and fair ratings, field verification and diagnostic testing; and
- c. Comply with the RESNET Code of Ethics. The RESNET Code of Ethics is posted at <http://www.natresnet.org/ethics.htm>. The Code of Ethics shall be attached to the written agreement. An unexecuted copy of the written agreement shall be provided to RESNET with a provider's accreditation application and within 60 days of making changes to the agreement.
- d. Proposed Amendment ADMIN:2004-01 to be placed here

4.C Minimum Standards For Home Energy Rating System's Operating Policies and Procedures

8. Written rater quality control process that includes at a minimum the following:

- a. The provider's quality assurance designee shall be responsible for the internal review of ratings submitted by its raters, including:
 - 1.) Review of ratings conducted during the raters' probation period - Prior to certifying a rater candidate the provider shall review at least 5 probationary ratings performed by the rater candidate within 12 months of training.
 - 2.) Review of rating data files – For each rater, the provider's quality assurance designee shall annually evaluate a minimum of 10% of each rater's rating data files. The provider shall resolve any problems detected during these reviews. Excessive problems will trigger field monitoring of the rater.
 - 3.) Field Monitored ratings - For each rater, the provider's quality assurance designee shall be responsible for an annual evaluation of the greater of one home or one percent of the rater's annual total of homes for which confirmed ratings and/or diagnostic testing services were provided. The provider's quality assurance designee shall ensure that a rating is independently repeated to determine whether the rating and/or diagnostic testing was accurately completed by the rater, and determine whether information was completely collected and reported as required in 3.B.1. of Chapter 3 of these standards.

b. Rating Recordkeeping – Providers and/or their certified raters shall maintain records for each rating.

- 1.) The quality assurance record for each home shall contain at a minimum the electronic copy of the building file.
- 2.) The record for each rating shall be maintained for a minimum of three years.

9. Rater Registry

The provider shall maintain a registry of all their certified raters. The provider will also keep on file the names and contact information for all, including company name, mailing address, voice phone number, fax number, and email address. Upon request the provider shall provide to RESNET its registry of certified raters.

10. Complaint Response System

Each provider shall have a system for receiving complaints. The provider shall respond to and resolve complaints related to ratings and field verification and diagnostic testing services and reports. Providers shall ensure that raters inform purchasers and recipients of ratings and field verifications about the complaint system. Each provider shall retain records of complaints received and responses to complaints for a minimum of three years after the date of the complaint.

11. Data Submittal

Upon RESNET's request, a provider shall submit to RESNET the total number of homes for which ratings were provided since the last data submittal. The ratings shall be identified by type (to include projected and confirmed ratings for new and existing homes). To the extent RESNET makes this information public, it will do so only in an aggregated form.

6.0 RESNET Quality Assurance Review of Accredited Providers

6.A. RESNET shall randomly select a limited number of accredited providers annually and conduct a review of their files. The RESNET Board of Directors shall determine the number of providers that shall be reviewed on an annual basis and who will provide the quality assurance review. An accredited rating provider may have the right to challenge the quality assurance reviewer for cause.

6.B. Records which may be reviewed include:

1. Rating electronic files
2. Rating quality assurance records
3. Complaint files
4. Rater agreements
5. Rater registry
6. Disclosure files

6.C. Significant inconsistencies or errors in the files reviewed may result in a field review

7.0 RESNET Ethics Committee

7.A. Purpose of Committee – The RESNET Ethics Committee shall have the responsibility of investigating ethics complaints and reporting findings and recommendations to the RESNET Board of Directors..

7.B. Composition of the Committee

1. The ethics committee will be composed of 5 members.

2. The members of the ethics committee shall be appointed by the RESNET Board of Directors.
3. Ethics committee members shall have two year terms that are staggered.

Create new section

Renumber other sections accordingly

8.0 Ethics Complaints

8.A. Filing of Ethics Complaints

1. Complaints may be filed against an accredited provider for violating the RESNET Code of Ethics, for failing to enforce the ethics code with their certified raters, or for failure to adhere to the accreditation requirements.
2. A complaint shall document the alleged violation(s). The complaint shall also be specific about which section(s) of the Code of Ethics, or the accreditation standards have been violated. To be considered, the full and complete complaint shall be sent by registered mail to the Executive Director of RESNET and contain the following information:
 - a. The name of the complainant and contact information
 - b. The accredited provider that is the subject of the complaint
 - c. A complete description of the alleged violation(s)
 - d. A recitation of all the facts documenting the complaint including contact information
 - e. Copies of any relevant documents

8.B. Investigation of Complaints

1. The RESNET executive director shall assign a case number and forward the complaint to the ethics committee. The committee shall consider the documentation contained in 8.a.2 in making a decision whether to proceed or dismiss the complaint.
2. In cases where the ethics committee finds the documentation submitted does not meet the minimum standards for a complaint, the complaint may be dismissed. Both parties shall be notified by registered mail of the ethics committee's finding.
3. Upon a decision by the ethics committee that the complaint should proceed to the next step the RESNET executive director shall send

a copy of the complaint by registered mail to the subject of the complaint immediately. The respondent has thirty (30) days to submit a full and complete response to the complaint. All relevant information and documentation shall be included in the response. The response shall be in writing and sent to RESNET by registered mail.

4. Upon receipt of the response, the RESNET executive director shall immediately forward the response to the RESNET Ethics Committee for consideration and action. Within thirty (30) days of receiving the complaint the Ethics Committee shall take action on the complaint. The action may include, but is not limited to:
 - a. Dismissal of complaint
 - b. Requirement that the rating provider take steps to correct problem
 - c. Recommendation of sanctions to the RESNET Board under 9.0 of this chapter
5. All parties to the complaint shall be informed by registered mail of the Ethics Committee's action.
6. All complaints, responses, and supporting documentation shall be handled in strict confidence by the RESNET staff, the Ethics Committee and the Board of Directors.

~~7.0~~ 9.0 Suspension and Revocation of Accreditation
(renumber section accordingly)

9.A For failures to correct deficiencies of home energy rating system
If the RESNET Board of Directors Mortgage Industry Accreditation Committee determines at any time that a home energy rating system has failed to adhere to the accreditation requirements, the RESNET Board of Directors accreditation committee...

1. In the event that the deficiencies have not been remedied, the RESNET Board of Directors Mortgage Industry Accreditation Committee shall have the authority ...
2. Upon determination by the RESNET Board of Directors Mortgage Industry Accreditation Committee that a home energy rating system has acted in a manner as to impair the objectivity or integrity of the

accreditation program or harm the reputation of the rating industry accreditation committee .

9.C. Suspension/Revocation Due Process

The RESNET Board of Directors Mortgage Industry Accreditation Committee shall comply with the following process

1. Notice

The RESNET Board of Directors Mortgage Industry Accreditation Committee may, at its discretion, initiate

2. Contest of Proposed Suspension/Revocation

A respondent may contest a proposed suspension/revocation by filing a response to the RESNET Board of Directors Mortgage Industry Accreditation Committee within 30 days ... If the respondent fails to file said response within an allocated time, the RESNET Board of Directors Mortgage Industry Accreditation Committee, may, in its discretion

3. Hearing

If the respondent files a timely response contesting the proposed suspension/revocation and requests a hearing, the RESNET Board of Directors Mortgage Industry Steering Committee will appoint

9.D. Notification of state's determination

Where a state has the statutory authority to regulate home energy rating system ... the state is encouraged to notify the RESNET Board of Directors Mortgage Industry Accreditation Committee of the action and the reason for such action.

10.0 ~~9.0~~ Appeals Procedures for Application Not Being Approved, Suspension or Revocation

(renumber section accordingly)

10.A. Notification

The RESNET Board of Directors Mortgage Industry Accreditation Committee shall notify the home energy rating system and the accreditation review body of

any decisions. Additionally, the RESNET Board of Directors committee shall clearly

10.B. Appeal

1. In the event that an accreditation application was not approved ... to appeal to the RESNET Board of Directors Mortgage Industry Home Energy Rating System Accreditation Committee.
2. In the event that a home energy rating system's accreditation is suspended ... to appeal to the RESNET Board of Directors Mortgage Industry Home Energy Rating System Accreditation Committee.
3. An appeal shall be in writing ... to the RESNET Executive Director Chairperson of the Mortgage Industry Home Energy Rating System Accreditation Committee and shall specify the basis for the appeal.
4. The appellant home energy rating system ... a hearing by the RESNET Board of Directors Mortgage Industry Home Energy Rating System Accreditation Committee.

Amendment EXP: 2004-01 – Incorporating Lighting, Appliances, and On-Site Energy Production in the Rating Score

Chapter 3.A.3. - Revise Definitions and Acronyms, to add the following:

Classic HERS Score – The rating point score using the normalized modified end use loads for space heating, cooling and hot water.

Bedroom - A room or space 70 square feet or greater, with egress window and closet, used or intended to be used for sleeping. A "den", "library", "home office" with a closet, egress window, and 70 square feet or greater or other similar rooms shall count as a bedroom, but living rooms and foyers shall not.

Conditioned Floor Area (“CFA”) – (INSERT FINAL LANGUAGE FROM AMENDMENT TECH: 2004-04).

Equivalent Electric Power – The amount of electricity that would be produced from site fossil fuel uses when converted to electrical power using the Reference Electricity Production Efficiency.

Expanded Score Equipment – Qualifying lighting fixtures, qualifying appliances and on-site power generation equipment that are included in the rating.

Expanded HERS Score - The rating point score including space heating, cooling, domestic hot water and all other rated Expanded Score Equipment.

Light Fixture - A complete lighting unit consisting of a lamp or lamps, and ballasting (when applicable) together with the parts designed to distribute the light, position and protect the lamps, and connect the lamps to the power supply. For built-in valence lighting, strings of low-voltage halogens, and track lights, each individual bulb shall count as a fixture.

Mechanical ventilation system – A fan designed to exchange the air in the house with outside air, sized to provide whole-house service per ASHRAE 62.2, and controlled automatically (i.e. not requiring human intervention to turn on and off).

Non-Rated Light Fixture - All light fixtures except for those in qualifying light fixture locations.

On-site Power Production (OPP) – Electric power produced at the site of a Rated Home. OPP shall be the net electrical power production, such that it equals the gross electrical power production minus any purchased fossil fuel energy, converted to its Equivalent Electric Power, used to produce the on-site power.

Purchased Energy Fraction (PEfrac) – The fraction of the total energy consumption of the Rated Home that is Purchased Energy, wherein all site fossil energy uses are converted to their Equivalent Electric Power using the Reference Electricity Production Efficiency of 40%.

Qualifying Appliances – For the purposes of rating, includes refrigerator/freezers, dishwashers, and ventilation fans.

Qualifying Light Fixture Locations – For the purposes of rating, those qualifying light fixtures located in kitchens, dining rooms, living rooms, family rooms/dens, bathrooms, hallways, stairways, entrances, bedrooms, garage, utility rooms, home offices and all outdoor fixtures mounted on a building or pole. This excludes plug-in lamps, closets, unfinished basements and landscape lighting.

Qualifying Light Fixture – A light fixture comprised of any of the following components: a) fluorescent hard-wired (i.e. pin-based) lamps with ballast; b) 100% screw-in compact fluorescent bulb(s); or c) light fixture controlled by a photocell and motion sensor.

Reference Electricity Production Efficiency – An electric power production efficiency, including all production and distribution losses, of 40%, approximating the efficiency of a modern, high-efficiency, central power plant. The Reference Electricity Production Efficiency is to be used only to convert site fossil fuel energy uses to an Equivalent Electric Power for the sole purposes of providing home energy rating system credit for On-site Power Production.

Chapter 3.B.1.a. To add a 5th requirement as follows:

- (5) If the Rated Home includes On-site Power Production (OPP), then OPP shall be calculated as the gross electric power produced minus the Equivalent Electric Power of any purchased fossil fuels used to produce the electric power. For example, assume 1000 kWh (3413 kBtu or 3.413 MBtu) of gross electrical power is produced using 80 Therms (8 MBtu) of natural gas to operate a high-efficiency fuel cell system. Using these assumptions, $OPP = 3.413 \text{ MBtu} - (8 \text{ MBtu} * 0.4) = 0.213 \text{ MBtu}$.

Chapter 3.B.1.c. – Amend as follows:

- c. All HERS providers shall compare the estimates provided under paragraph B.1.a. of this section to determine the energy efficiency rating of the home and, if applicable, the energy efficiency rating of the home with proposed conservation measures and On-site Power Production installed.

Chapter 3.B.1.d. – Amend as follows:

- d. To encourage the use of energy efficient lights and appliances, HERS providers ~~may provide~~ collect additional information on ~~estimated~~ light fixtures and appliances ~~energy consumption~~ in the Rated Home to include in the expanded rating point score. ~~This information shall not change the rating score set forth in Section B.2.a. of these Guidelines.~~

Chapter 3.B.2. – Amend as follows:

- a. Where programs or providers choose to not report the Expanded Score, only the Classic HERS Score shall be displayed.

Change numbering in this section after adding new “a” above, make old “a” now “b” and old “b” now “c”.

Step (2) Determine the point ~~point~~ “Classic HERS Score” score using equation 2:

Chapter 3.B.2.a. - Add a new Step (3) as follows:

Step (3) Determine the “Expanded HERS Score” using equation 3:

$$\text{Point Score} = 100 - ((\text{PEfrac} * \text{TnML}_{\text{EXP}} / \text{TRL}_{\text{EXP}}) * 20) \quad (\text{Eq. 3})$$

Where:

$$\text{TnML}_{\text{EXP}} = \text{nMEUL}_{\text{HEAT}} + \text{nMEUL}_{\text{COOL}} + \text{nMEUL}_{\text{HW}} + \text{EUL}_{\text{LA}}$$

(Total of all normalized Modified End Use Loads as calculated using equation 1 plus Qualifying Light Fixture Locations and Qualifying Appliance loads).

$$\text{TRL}_{\text{EXP}} = \text{REUL}_{\text{HEAT}} + \text{REUL}_{\text{COOL}} + \text{REUL}_{\text{HW}} + \text{REUL}_{\text{LA}}$$

(Total of all Reference Home End Use Loads including Qualifying Light Fixture Locations and Qualifying Appliance loads).

and where:

$$\text{PEfrac} = (\text{TEU} - \text{OPP}) / \text{TEU}$$

TEU = Total energy use of the Rated Home including all rated and non-rated energy features where all fossil fuel site energy uses are converted to Equivalent Electric Power by multiplying them by the Reference Electricity Production Efficiency of 40%

OPP = On-site Power Production as defined by Section B.1.a.(5)

Chapter 3.B.2.b. – Amend as follows:

- b. Star rating. The Rated Home will be given a star rating between one and five-plus stars, determined by the numerical score and the corresponding number of stars depicted in Table 2 for each of the Classic and Expanded HERS Scores.

Chapter 3.B.3.a.(1) – Amend as follows:

- 3. Rating report.
 - a. For each rating conducted under this part, a report shall be prepared containing, at a minimum, the following information:

(1) The numerical rating score(s) for the Classic HERS Score and, when applicable, the Expanded HERS Score determined in Section B.2.a of these Guidelines;

Chapter 3.B.3.e.(3) – Amend as follows:

(3) Rating point score(s) (i.e. Classic HERS Score at all times, and Expanded HERS Score, if applicable) and;

Chapter 3.B.4.a. – Amend as follows:

Add:

- (22) Reference home annual lighting use (in kWh) is the product of the house conditioned floor area and the annual lighting intensity for the qualifying fixtures; that is, lighting energy use in kWh/yr = (CFA*0.64) + 364).
- (23) Reference home annual refrigerator energy use is 775 kWh/yr.
- (24) If a dishwasher is indicated in the design, one will be included in the reference home. When present, reference home annual dishwasher energy use is based on the number of Bedrooms from the following Table 6.

Table 6

<u>Bedrooms</u>	<u>Reference Dishwasher kWh</u>
<u>1</u>	<u>90</u>
<u>2</u>	<u>126</u>
<u>3</u>	<u>145</u>

<u>4</u>	<u>174</u>
<u>5+</u>	<u>203</u>

(25) If a mechanical ventilation system is indicated in the design, one will be included in the reference home. When present, the reference home annual mechanical ventilation system energy use shall be as follows:

$$\text{Annual vent energy (kWh/year)} = 0.03942 * \text{CFA} + 29.565 * (\text{N}_{br} + 1)$$

Chapter 3.B.5.- Amend as follows:

- a. All HERS providers shall calculate the estimated annual purchased energy consumption for heating, cooling, and water heating (and, if applicable, lighting and appliances) set forth in Section B.1 of these Guidelines using the energy loss and gain associated with the minimum rated features set forth in Table 7.

Insert new subsections 'i.', 'j.' and 'k.' and re-alphabetize the current 'i.' to 'l.' :

- i. For the purpose of calculating light fixture energy consumption for calculating the rating score, the annual light fixture usage (in kWh) is the product of the annual lighting intensity and the Conditioned Floor Area (CFA), where the annual lighting intensity "ALI" (kWh/yr-ft²) = (98.38/CFA + 0.1730)*(FL%) + (393.5/CFA + 0.6919)*(1-FL%) and where FL% is the ratio of Qualifying Light Fixtures to all light fixtures in Qualifying Light Fixture Locations. The rated home shall never have FL% less than 10%.

For the purpose of calculating the light fixture energy consumption to report annual purchased energy, the annual lighting consumption is equal to ALI 0.8 *CFA (kWh/yr).

- j. For the purposes of calculating dishwasher energy consumption and hot water energy consumption, when a dishwasher is present, space is provided or if specified, the energy consumption shall be calculated based on the following formula with inputs from the following Cycles/Year by number of Bedroom (N_{br}) as specified in Table [insert appropriate table number].

$$\text{Dishwasher annual energy use (kWh/yr)} = (0.27) * (\text{cycles/yr}) / (\text{dishwasher rated Energy Factor})$$

And the reduction in hot water use (gallons/day) shall be based on the following formula, to be used in adjusting Equation 7 under 3.B.6.b.5.:

$$\text{Reduction in hot water use (gallons/day)} = [(7.4 \text{ gal/cycle}) - (0.73)/(\text{dishwasher rated Energy Factor})/(90^{\circ}\text{F})/(0.0024\text{kWh/gal/F})] * [(\text{cycles/yr})/(365 \text{ days/year})]$$

[Table #]

N _{br}	Cycles/Yr
1	154

2	214
3	247
4	296
5+	345

- k. If the Rated Home includes On-site Power Production, the Purchased Energy Fraction for the Rated Home shall be used to determine the impact of the On-site Power Production on the HERS point score.

Chapter 3.B.5. Table 7 – Amend as follows:

Break Table 7 into two tables: 7A and 7B

Create new Table 7B as follows:

Table 7B. Additional Minimum Rated Features for Expanded HERS Score

1. <u>Light fixtures</u>	<u>Number of qualifying and non-qualifying light fixtures in qualifying locations (i.e. kitchens, dining rooms, living rooms, family rooms/dens, bathrooms, hallways, stairways, entrances, bedrooms, garage, utility rooms, home offices and all outdoor fixtures mounted on a building or pole (excluding landscape lighting)).</u>
2. <u>Refrigerator(s)</u>	<u>Total annual energy consumption (kWh) for all units from:</u> <u>California Energy Commission: Appliance Database at</u> <u>http://www.energy.ca.gov/appliances/appliance/index.html</u> <u>or</u> <u>Association of Home Appliance Manufacturers (AHAM) directories</u>
3. <u>Dishwasher(s)</u>	<u>Total annual energy consumption (kWh) for all units from:</u> <u>http://www.ftc.gov/bcp/online/edcams/ean/index.html</u>
4. <u>Mechanical Ventilation System(s)</u>	<u>Equipment type, daily run hours, and wattage (may be listed in the Certified Home Ventilating Products Directory</u>

	<u>available from the Heating and Ventilation Institute (HVI), www.hvi.org).</u>
<u>5. Photovoltaics</u>	<u>Total annual kWh generation from installer/manufacturer.</u>

Chapter 3.B.6.b. – Amend as follows:

b. All HERS providers shall estimate the annual purchased energy consumption for heating, cooling, and water heating and, if applicable, the annual purchased energy consumption for light fixtures and appliances for both the Rated Home and the Reference Home using the following assumptions–

(3) Internal heat gains (“IGain” in Btu/day per dwelling unit) from lights, people and equipment of $17,900 + 23.8 * CFA + 4,140 * N_{br}$

as adjusted for lower internal gains assuming 90% of the change in the lighting energy with respect to the Reference home light fixtures and assuming 100% of the change in appliance energy with respect to the Reference home for lights and appliances in the Rated home that are more efficient than those of the Reference home.

Chapter 3.B.7. Table 10 - Amend as follows:

Add as introductory language between the table name “TABLE 10.-Annual Energy Use for Non-Rated Features” and the table itself:

The values in Table 10 shall be used for the Classic HERS Score. If the Expanded HERS Score is to be displayed, actual energy use shall be used for those end-uses included in the Expanded HERS Score.

Insert in alphabetical order in Table 10:

End use	Units/year	Energy estimate	Applicability
Dishwasher	kWh	- As specified in <u>3.B.4.a.(25)</u> .	If present, if specified, or if space is dedicated for dishwasher.
<u>Freezer</u>	<u>kWh</u>	<u>641</u>	<u>Each one present.</u>
Lights	kWh	- $(0.64 * CFA + 364) / 0.8$	All homes.
<u>Mechanical Ventilation System</u>	<u>kWh</u>	- As specified in <u>3.B.4.a.(26)</u> .	<u>Each one present.</u>
Refrigerator	kWh	- As specified in <u>3.B.4.a.(23)</u> .	Each one present.

<u>Photovoltaics</u>	<u>kWh</u>	<u>None</u>	<u>Each one present</u>
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Amendment TECH: 2004-01 – Insulation Inspection Procedures

Chapter 3.B.5. add subsection e, and renumber subsequent:

3.B.5.e Default values for insulation that is not inspected according to the procedures in Appendix A shall be modeled according to the requirements of Grade III under 3.B.5.m, and shall be recorded as “not inspected” in the rating information.

Exceptions:

1. Modular and manufactured housing using IPIA (In-Plant Inspection Agent) inspections may be substituted for the HERS inspection. However, housing manufacturer shall include RESNET insulation inspection details and requirements in their “DAPIA” (Design Approval Primary Inspection Agency) packages submitted to HUD which are used by IPIA’s for their factory inspections.
2. Structural Insulated Panels (SIP’s), Insulated Concrete Forms (ICF’s), and other similar insulated manufactured assemblies. Note that manufacturer’s claims of “equivalent” R-values based on reduced air leakage or other secondary effects may not be used; only the thermal resistance values for the actual materials as found in ASHRAE Fundamentals may be used.
3. A RESNET-approved, third-party audited installer certification program may be substituted under the conditions specified in the RESNET approval process.

Chapter 3.B.5., - Add section “m”, “n”, “o”, “p”, and “q”:

- m. Insulation assessment: Insulated surfaces categorized as “Grade I” (see section B.9) shall be modeled such that the insulation R-value within the cavity is considered at its measured (for loose fill) or labeled value (including other adjustments such as compression, and cavity fill versus continuous) for the insulated surface area (not including framing or other structural materials which shall be accounted for separately). Insulated surfaces categorized as “Grade II” per section B.9 shall be modeled such that there is no insulation R-value for 2% of the insulated surface area, and its measured or labeled value (including other adjustments such as compression, and cavity fill versus continuous) for the remainder of the insulated surface area (not including framing or other structural materials). Insulated surfaces categorized as “Grade III” shall be modeled such that there is no insulation R-value for 5% of the insulated surface area, and its measured or labeled value (including other adjustments such as compression, and cavity fill versus continuous) for the remainder of the insulated surface area (not including framing or other structural materials). Other building materials, including framing, sheathing, and air films shall be assigned aged or settled R-values according to ASHRAE Fundamentals. Please note that the Federal Trade Commission (FTC) Home Insulation Rule regulates assigning, testing, assessing and labeling the R-Value of home insulation. For additional information, please reference 16 CFR § 460, and subsequent FTC rulemaking documents.
- n. Insulation that does not cover framing members shall not be modeled as if it covered the framing. Insulated surfaces that have continuous insulation (i.e. rigid

foam, fibrous batts, loose fill, or sprayed insulation) covering the framing members shall be assessed and modeled according to section B.9 and combined with the cavity insulation, framing and other materials to determine the overall assembly R-value.

- o. Compression: for modeling purposes, the base R-value of fibrous insulation that is compressed to less than its full rated thickness in a completely enclosed cavity shall be assessed according to the manufacturer's documentation; in the absence of such documentation, use R-value correction factor (CF) for Compressed Batt or Blanket from Manual J, 8th edition Table A5-1, section 7-d.
- p. Where large areas of insulation that is missing, or has a different R-value from the rest of an assembly exist, these areas shall be modeled with the appropriate R-value and assembly description separately from the rest of the assembly. Insulation R-values may not be averaged according to coverage area. For example: if 50 square feet of a wall area has no cavity fill insulation at all, that 50 square feet shall be recorded as a separate building component with no cavity insulation, but with the existing structural components.
- q. Steel framing in insulated assemblies: calculations for the overall thermal properties of steel-framed walls, ceilings and floors shall be based on the "Thermal Design Guide for Exterior Walls, Publication RG-9405, American Iron and Steel Institute; the "Zone Method" from 2001 ASHRAE Handbook of Fundamentals (P 25.10-11); or equivalent.

- r. Where large areas of insulation that is missing, or has a different R-value from the rest of an assembly exist, these areas shall be modeled with the appropriate R-value and assembly description separately from the rest of the assembly. Insulation R-values may not be averaged according to coverage area. For example, if 50 square feet of a wall area has no cavity fill insulation at all, that 50 square feet shall be recorded as a separate wall area with no cavity insulation.
- s. Steel framing in insulated assemblies: calculations for the overall thermal properties of steel-framed walls, ceilings and floors shall be based on the "Thermal Design Guide for Exterior Walls, Publication RG-9405, American Iron and Steel Institute, the "Zone Method" from 2001 ASHRAE Handbook of Fundamentals (P 25.10-11), or equivalent.

TABLE 7, Minimum rated features – Amend as follows:

Building element	Minimum rated features
1. Floor/Foundation Assembly.	Construction type (slab-on-grade, crawl space; basement), insulation value (edge, under slab, cavity, sheathing), framing material and on-center spacing, insulation installation (Grade I, II, or III), vented or unvented (crawl space), capacitance (if slab or basement receives appreciable solar gain).

2. Walls	Construction type, insulation value (cavity, sheathing), framing material and on-center spacing, insulation installation (Grade I, II, or III), capacitance, color (light, medium, or dark).
3. Roof/Ceiling Assembly	Construction type, insulation value (cavity, sheathing), framing material and on-center spacing, insulation installation (Grade I, II, or III), framing covered by insulation or exposed, roof color (light, medium, or dark).

Chapter 3.B. – Add :

9. Insulation Installation: Installed cavity insulation shall be rated as Grade I, II, or III) according to the on-site inspection procedures in Appendix A (page xx).

Appendix A: Building Element: Walls; Insulation Value - Insert another table row after the row “ Insulation Value” for walls:

Building Element: Walls		
Rated Feature	Task	On-Site Inspection Protocol
<u>Insulation Installation</u>	<u>Determine cavity insulation installation characteristics</u>	<p><u>When it is possible to inspect insulation as installed (i.e., new construction), inspectors shall rate the installation as “Grade I, II, or III” according to the following guidelines, regardless of insulation material or installation process. Note that all insulation installation techniques require proper care to ensure they are completed correctly; if they are not, thermal performance can suffer dramatically. These guidelines apply to cavity fill insulation, continuous rigid insulation, and any other field-installed insulation products.</u></p> <p><u>1. "Grade I" shall be used to describe insulation that is generally installed according to manufacturers instructions and/or industry standards. A "Grade I" installation requires that the insulation material uniformly fills each cavity side-to-side and top-to-bottom, without substantial gaps or voids around obstructions (such as blocking or bridging), and is split, installed, and/or fitted tightly around wiring and other services in the cavity. To inspect, probe in, around, or through the insulation and/or vapor retarder in several places to see whether these requirements are met. Replace or repair the vapor retarder and insulation as</u></p>

necessary. During inspection (typically before drywall is installed), if the exterior sheathing is visible from the building interior through gaps in the cavity insulation material, it is not considered a “Grade I” installation.

To attain a rating of "Grade I", wall insulation shall be enclosed on all six sides, and shall be in substantial contact with the sheathing material on at least one side (interior or exterior) of the cavity.

For rim or band joist insulation, use the inspection guidelines under “Walls—Insulation value” to assess “Grade I”, “Grade II”, or “Grade III” installation..

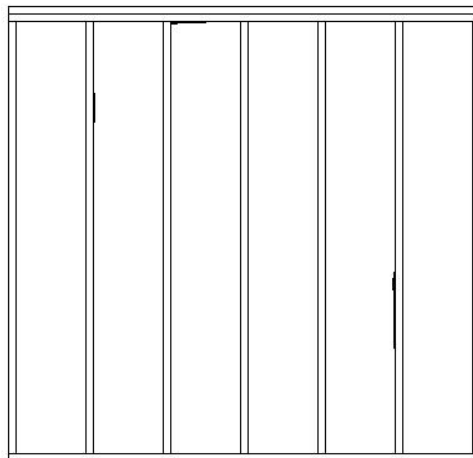
For exterior applications of rigid insulation, insulation shall be in firm contact with the structural sheathing materials, and tightly fitted at joints to be considered a “Grade I” installation.

For faced batt insulation, Grade I can be designated for side-stapled tabs, provided the tabs are stapled neatly (no buckling), and provided the batt is only compressed at the edges of each cavity, to the depth of the tab itself, and provided it meets the other requirements of Grade I.

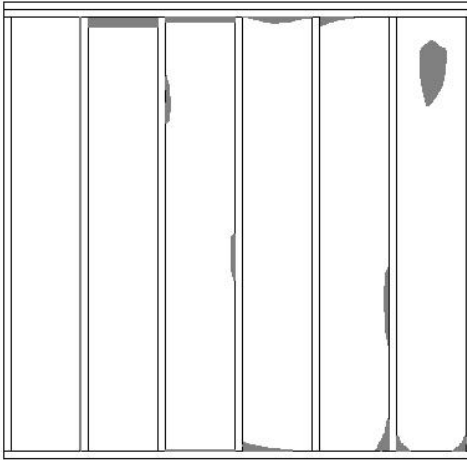
For sprayed or blown-in products, density shall be sufficient that the fill material springs back when compressed slightly with a hand or finger, and provided it meets the other requirements of Grade

Interpretation:

The following illustrations represent the boundary conditions between Grade I and Grade II, that is, the installation shall be *at least* this good to be labeled as “Grade I”:



Occasional very small gaps are acceptable for “Grade I”.



Compression or incomplete fill amounting to 2% or less, if the empty spaces are less than 30% of the intended fill thickness, are acceptable for "Grade I".

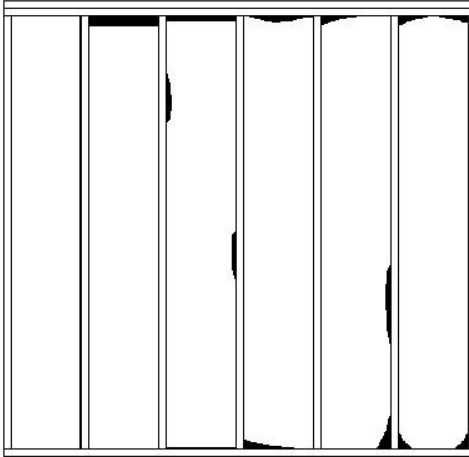
The following standards may be applied as a reference: NAIMA, *Recommendations for Installation in Residential and Other Light-Frame Construction—Fiber Glass Home Insulation* (PUB # BI402), *Recommendations for Installation in Residential and Other Light-Frame Construction—Fiber Glass Loose Fill Insulation* (PUB # BI403), CIMA, Technical Bulletin #2 -- *Standard Practice for Installing Cellulose Building Insulation*, Technical Bulletin #3-- *Standard Practice for Installation of Sprayed Cellulosic Wall Cavity Insulation*. For other products and materials, manufacturer's installation instructions will apply.

2. "Grade II" shall be used to describe an installation with moderate to frequent installation defects: gaps around wiring, electrical outlets, plumbing and other intrusions; rounded edges or "shoulders"; or incomplete fill amounting to 10% or more of the area with less than 70% of the intended thickness (i.e., 30% compressed); or gaps and spaces running clear through the insulation amounting to no more than 2% of the total surface area covered by the insulation. To attain a rating of "Grade II", wall insulation shall be enclosed on all six sides, and shall be in substantial contact with the sheathing material on at least one side (interior or exterior) of the cavity.

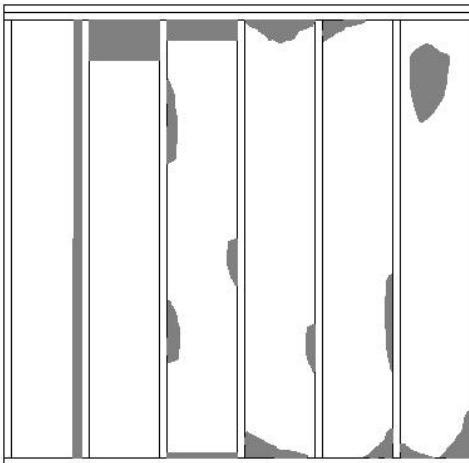
Interpretation:

The following illustrations represent the boundary conditions between Grade II and Grade III, that is, the installation shall be at least this good to be labeled as

"Grade II":



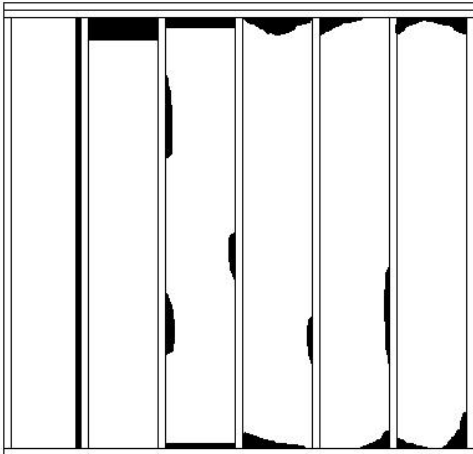
No more than 2% of surface area of insulation missing is acceptable for "Grade II"



No more than 10% of surface area of insulation compressed or incomplete fill, by more than 30% (70% or less of intended thickness) is acceptable for "Grade II".

3. "Grade III" shall be used to describe an installation with substantial gaps and voids, with missing insulation amounting to greater than 2% of the area, but less than 5% of the surface area is intended to occupy. More than 5% missing insulation shall be measured and modeled as separate, uninsulated surfaces according to 3.B.5.p.

This designation shall include wall insulation that is not in substantial contact with the sheathing on at least one side of the cavity, or wall insulation in a wall that is open (unsheathed) on one side and exposed to the exterior, ambient conditions or a vented attic or crawlspace. The presence of an air-impermeable barrier such as housewrap will be considered to enclose the building cavities.

		<p><u>Interpretation:</u> <u>The following illustration represents the boundary conditions between Grade III and the situation whereby one must measure the uninsulated areas; that is, the installation shall be <i>at least</i> this good to be labeled as “Grade III”:</u></p> 
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Appendix A, Building Element: Roof/Ceiling; Insulation Value – Amend as follows:

Building Element: Roof/Ceiling		
Rated Feature	Task	On-Site Inspection Protocol
<u>Insulation Value</u>	<u>Determine R-value of insulation in attic</u>	<u>Measure the depth in four places.</u>

Appendix A, Building Element: Roof Ceiling (continued) Rim Joist; Insulation Value – Amend as follows:

Building Element: Ceiling		
Rated Feature	Task	On-Site Inspection Protocol
Insulation Value	Determine insulation value	<p>Average the four measurements.</p> <p><u>Use the inspection guidelines under “Walls—Insulation value” to assess “Grade I”, “Grade II”, or “Grade III” installation. Note: in addition to the inspection guidelines under “Walls”, “Grade I” installation for ceiling insulation also requires that the insulation be installed in complete contact with the drywall or plywood surfaces it is intended to insulate. For loose fill applications, be sure to get four</u></p>

		<p><u>readings which accurately reflect the insulation level (do not just measure the low or high spots; the depth should be representative of the entire attic area being examined). Multiply the average depth of insulation by its R-value per inch to obtain the total R-value. Ceiling insulation need not be enclosed to attain a “Grade II” or “Grade I” assessment. For ceiling insulation, eave baffles or equivalent construction is required to prevent wind washing to be considered “Grade I”.</u></p> <p><u>Note whether the cavity insulation leaves the framing exposed, or covers them; if covered, note the thickness that covers the framing.</u></p>
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Appendix A, Building Element: Floor of unconditioned basement or crawl space – Insulation – Amend as follows:

Building Element: Floor of unconditioned basement or crawl space		
Rated Feature	Task	On-Site Inspection Protocol
Insulation	Determine amount of floor insulation	Use the inspection guidelines under “Walls—Insulation value” to assess “Grade I”, “Grade II”, or “Grade III” installation. Note: in addition to the inspection guidelines under “Walls”, “Grade I” installation for floor insulation also requires that the insulation be installed in complete contact with the subfloor surfaces it is intended to insulate. For loose fill applications, multiply the thickness of the insulation (in inches) by the appropriate R-value per inch based on the insulation type in order to calculate the total existing floor insulation R-value. Floor insulation over unconditioned basements need not be enclosed to attain a “Grade II” or “Grade I” assessment; floor insulation over vented or ambient conditions does.

Amendment: TECH: 2004- 02 – Definition of Standards for Measuring House Tightness

Appendix A, Building Element Air Leakage – Amend as follows;

Building Element: Air leakage

Blower door test	Determine effective leakage area from a blower door test	<p><u>Use current protocol, such as ANSI/ASTM E-779-87</u> <u>Use the testing protocol described in ASHRAE Standard 119 Section 5.1, with the modifications described below:</u></p> <p><u>The following protocol shall be followed in preparing the building envelope for testing:</u></p> <ol style="list-style-type: none"> <u>1. Leave all supply registers and return grills open and uncovered.</u> <u>2. Leave all bathroom and kitchen fans open (i.e., in their normal operating condition). Only a permanently installed back draft damper in its normal condition may impede the flow of air.</u> <u>3. Leave any combustion air ducts or louvers to the exterior open. (If a homeowner or builder has sealed them off, open them for the test.)</u> <u>4. Leave any make-up air ducts with in-line dampers (e.g., for large kitchen exhaust fans or combustion air) as-is (unsealed). Only a permanently installed back draft damper or motorized damper, in its normal condition may impede the flow of air.</u> <u>5. Leave the dryer vent as-is, whether or not the dryer is in place during the test. Only a permanently installed back draft damper in its normal condition may impede the flow of air.</u> <u>6. Leave open any outside air duct supplying fresh air for intermittent ventilation systems (including a central-fan-integrated distribution system)</u> <u>7. Operable crawl-space vents, where present, are to be left in the open position.</u> <u>8. Open all interior doors within the conditioned space, including doors to conditioned basements. (Closet doors may be left closed unless the closet contains windows or access to the attic or crawl</u>
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		<p><u>space).</u></p> <p><u>9. Leave louvered openings of a whole-house fan as is. (If there is a seasonal cover in place during the test, leave it in place.)</u></p> <p><u>10. Close all doors to the exterior or unconditioned spaces; if any door to the exterior or unconditioned space lacks weather-stripping at testing time, it can be temporarily taped off.</u></p> <p><u>11. Close and latch all windows.</u></p> <p><u>12. Close chimney dampers.</u></p> <p><u>13. Either seal or fill with water plumbing drains with p-traps that may be empty.</u></p> <p><u>14. Seal off exterior duct openings to <i>continuously operating</i> fresh-air or exhaust-air ventilation systems (preferably at the exterior envelope).</u></p> <p><u>15. Close any adjustable window trickle ventilators and/or adjustable through-the-wall vents.</u></p> <p><u>16. If an evaporative cooler has been supplied with a device used to seal openings to the exterior during the winter, that device should be installed for the test.</u></p>
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Amendment TECH: 2004- 03 – Blower Door Test Procedures

Appendix A: Building Element: Air Leakage – Amend as follows:

Building Element: Air leakage		
Rated Feature	Task	On-Site Inspection Protocol
Blower door test	Determine effective leakage area from a blower door test	<p><u>Use the testing protocol described in ASHRAE Standard 119 Section 5.1. Blower door and associated pressure testing instruments, which include but are not limited to hoses, and Manometers, gauges and fans shall be field tested annually for calibration by the HERS provider or rater. The provider shall use a standard for field testing of calibration provided by the equipment manufacturer. Magnehelic Gauges cannot be field tested and shall be recalibrated by the Blower Door manufacturer annually. Field check the fan and flow measuring systems for defects and maintain them according to manufacturers recommendations</u></p> <p><u>The HERS provider shall maintain a written log of the annual calibration check to verify all equipment accuracy for a period of three (3) years. These records shall be made available within 24 hours to a RESNET Quality Assurance Committee member upon request. It is recommended all pressure equipment be field checked for calibration more frequently than is required in these standards, i.e., monthly, quarterly, etc.</u></p>

Amendment TECH: 2004-04- Surface Area: Procedures for Measuring Floor Dimensions

Appendix A, Building Element: Foundation – Amend as follows:

Appendix A. Building Element: Foundation:

Building Element: Foundation (continued)		
Rated Feature	Task	On-Site Inspection Protocol
Surface area	Measure floor dimensions	<p>Measure the exterior linear perimeter to the nearest ½ foot of all floors over unconditioned space. Use these dimensions to calculate floor area. <u>Measure floor dimensions in accordance with ANSI Z765-1996 with the exception of Section 3 Paragraph 6 (floor areas with ceiling heights of less than 5' will be included in finished square footage).</u></p> <p>For conditioned basements and crawl spaces, find dimensions of basement walls and floor. Divide walls into above and below grade sections.</p> <p><u>Measure the house or assembly element (window, wall, ceiling, etc.) to the nearest inch, and record the square footage to the nearest square foot. Use exterior measurements; those measurements should start at the exterior finished surface of the outside wall. Openings to the floor below should not be included in the square footage calculation, with the exception of stairways; stairways and associated landings are counted as square footage on both the starting and ending</u></p>

		<p><u>levels. Do not include the “footprint” of protruding chimneys or bay windows. Do include the “footprint” of other protrusions like a cantilever when it includes finished floor area. Do include the square footage of separate finished areas that are connected to the main body of the house by conditioned hallways or stairways. Note to divide basement and crawl space walls into above and below grade.</u></p>
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Amendment TECH: 2004-05 Auxiliary Energy Consumption

Chapter 3, A.3. – Add definitions:

Eae – The average annual auxiliary electrical energy consumption for a gas furnace or boiler in kilowatt-hours per year as published in the GAMA Consumer’s Directory of Certified Efficiency Ratings.

Auxiliary Electric Consumption – The annual auxiliary electrical energy consumption for a gas furnace or boiler in kilowatt-hours per year, derived from the Eae as follows:

$$\text{Auxiliary Electric Consumption (kWh/yr)} = \text{Eae} * (\text{HLH}) / 2080$$

where

HLH = annual heating load hours seen by the furnace/boiler

Note: If fan power is needed (kW), it is determined by Eae / 2080.

Chapter 3, B.2.a. – Amend as follows:

- a. Point score. The Reference Home shall have a point score of 80 points on a 0 to 100 point scale. Each 5% increase or decrease in the relative energy efficiency potential of the Rated Home with respect to the Reference Home shall constitute a 1-point increase or decrease, respectively (from 80), in the Rated Home's score. The method used to calculate the score shall be approved by the accrediting body and be consistent for each HERS provider operating within a state. Except in states or territories whose laws or regulations require a specific alternative method, which shall control, equations 1 and 2 shall be used in a 2-step process to calculate the point score for the Rated Home, as follows:

Step (1) Calculate the individual normalized Modified End Use Loads (nMEUL) for heating, cooling, and hot water using equation 1:

$$\text{nMEUL} = \text{REUL} * (\text{nEC}_x / \text{EC}_r) \quad (\text{Eq. 1})$$

where:

nMEUL = normalized Modified End Use Loads (for heating, including auxiliary electric consumption, cooling, or hot water).
REUL = Reference Home End Use Loads (for heating, including auxiliary electric consumption, cooling, or hot water) as computed using accredited simulation tools.

nEC_x = normalized Energy Consumption for Rated Home's end uses (for heating, cooling or hot water).

EC_r = estimated Energy Consumption for Reference Home's end uses (for heating, cooling or hot water) as computed using accredited simulation tools.

Chapter 3,B.4. - Insert after Subsection (15) and renumber all subsequent subsections and tables:

- (16) For non-electric warm furnaces and non-electric boilers the values in Table 6 shall be used for auxiliary electric (Eae).

Table 6. Reference Home Eae Values

	Eae
Oil boiler	330
Gas boiler	170
Oil furnace	$439 + 5.5 * \text{Capacity(kBtuh)}$
Gas furnace	$149 + 10.3 * \text{Capacity(kBtuh)}$

Chapter 3,B.5.e.(3)h – Amend as follows:

- h. In the case where information on the energy efficiency of mechanical equipment cannot be determined from the source listed in paragraph (3) of this section, the values set forth in Tables 8 ~~and~~, 9 and 10 shall be used.
- i.

Chapter 3,B.5. - Modify Table 7: Minimum Rated Features:

12. Heating Equipment	Equipment type, location, efficiency (AFUE, HSPF), <u>auxiliary electric (Eae)</u>
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Chapter 3,B. - Insert new Table 10 and renumber all subsequent tables:

Table 10 Default Eae Values

	Eae
Oil boiler	330
Gas boiler	170
Oil furnace	$439 + 5.5 * \text{Capacity(kBtuh)}$
Gas furnace	$149 + 10.3 * \text{Capacity(kBtuh)}$

Amendment TECH: 2004-06 - Coefficients for Oil Heat

Chapter 3, B.2.a. - Amend as follows:

Table 1. Coefficients 'a' and 'b'

Fuel type and End Use	a	b
Electric space heating	1.9924	0
Natural gas space heating	1.2544	0.6082
Fuel oil space heating	2.4324	2.1180
Fossil fuel* space heating	1.2544	0.6082
Electric air conditioning	2.9301	0
Electric water heating	0.8800	0
Natural gas water heating	0.9404	0.7415
Fuel Oil water heating	1.5569	1.9376
Fossil fuel* water heating	0.9404	0.7415

*such as natural gas, LP, fuel oil

Amendment TECH: 2004-07 – Renewable Energy Sources in the Reference Home

Chapter 3,B.4.,- Add:

(22) Renewable energy systems, utilizing solar, wind or other renewable energy sources, which offset the energy consumption requirements of the Rated home, shall not be included in the Reference home.

Amendment TECH 2004-08 – Natural Ventilation in Reference Home

Chapter 3,B.6.b., - Insert new subparagraph following subparagraph (7) and renumber accordingly:

Natural ventilation shall be assumed in both the Reference and Rated homes during hours when natural ventilation will reduce annual cooling energy use. When a whole-house fan is present in the Rated Home, it shall operate during hours of favorable outdoor conditions, and no whole-house fan shall be assumed in the Reference Home. The fan energy associated with the whole-house fan shall be included in the normalized Energy Consumption for the Rated Home's cooling end-use (nEC_x).

Amendment TECH: 2004-9 – Discount Rate and the Life of Measures Used by a Rating Provider for Fannie Mae Energy Efficient Mortgages

Chapter 3, B.3.b. (3) – Amend as follows;

- (3) The financing interest rate and the life of the measures used by the HERS provider to determine the present worth value.
 - (a) For Fannie Mae energy efficient mortgage products, the financing interest rate (Assumed Rate) shall be provided by RESNET annually from the information provided by Fannie Mae.
 - (b) A weighted lifetime of 23 years shall be used in determining the present value of the energy cost savings.

Amendment TECH: 2004-10 – Standardized Economic Calculation of Present Value for Energy Mortgages

Chapter 3, B.3.b. (2), Amend as follows:

(2) ~~The discount rate applied to, and~~ Energy Value of improved homes (present worth value of the energy cost savings) shall be calculated as follows

(a) For Fannie Mae energy efficient mortgages the present value factor shall be calculated as:

$$\text{pvf} = [1 - (1 + r)^{-n}] / r$$

where:

pvf = present value factor

r = prevailing mortgage rate (Assumed Rate)

n = weighted life of the measures (23 years)

To determine the Energy Value of the improved home, the present value factor (pvf) shall be multiplied by the Annual Energy Savings.

(b) The Annual Energy Savings for a home shall be calculated by comparing the projected annual energy use cost of the Rated home with the projected annual energy use cost of either the RESNET representation of the 1993 Model Energy Code's Standard Design Home for new homes or with the original home for existing homes. The Monthly Energy Savings for the improved home shall be equal to the Annual Energy Savings for the home divided by 12.

(c) For FHA and Freddie Mac energy mortgages the "Present Worth of Energy Savings" shall be calculated by taking the net energy savings (the annual energy savings minus the maintenance costs) times the present value factor developed by the U.S. Department of Housing and Urban Development. The present value is posted on RESNET's web site at http://www.natresnet.org/lenders/handbook/hud_93-13b.htm.

Amendment TECH: 2004-11 – Default Framing Factors for Enclosed Elements

Proposed Revision: Chapter 3,B.4a.(3) - add new section

- (d) All enclosure elements shall use framing fractions that are consistent with and representative of reality. Default enclosure framing fractions are provided by Table 4.

Table 4. Default Framing Fractions for Enclosure Elements

<u>Enclosure Element</u>	<u>Frame Spacing (in o.c.)</u>	<u>Default Frame Fraction (% area)</u>
<u>Walls (std):</u>		
@16" o.c.	16	23%
@24" o.c.	24	20%
<u>Walls (advanced):</u>		
@16" o.c.	16	19%
@24" o.c.	24	16%
Struct. Insul. Panels	48	10%
<u>Floors (std):</u>		
@16" o.c.	16	13%
@24" o.c.	24	10%
<u>Floors (advanced):</u>		
@16" o.c.	16	11%
@24" o.c.	24	8%
<u>Ceilings (standard trusses):</u>		
@16" o.c.	16	14%
@24" o.c.	24	11%
<u>Ceilings (advanced trusses – "raised heel"):</u>		
@16" o.c.	16	10%
@24" o.c.	24	7%
<u>Ceilings (conventional framing):</u>		
@16" o.c.	16	13%
@24" o.c.	24	9%

Amendment TECH: 2004-12 – HEIR for Heat Pumps

Chapter 3,B.6.b. - Insert a new subparagraph, following subparagraph (7), renumber all subsequent subparagraphs accordingly:

(8) For heat pumps and air conditioners where a detailed, hourly HVAC simulation is used to separately model the compressor and evaporator energy (including part-load performance), the back-up heating energy, the distribution fan or blower energy and crank case heating energy, the Manufacturer's Equipment Performance Rating (HSPF and SEER) shall be modified as follows to represent the performance of the compressor and evaporator components alone: $HSPF, corr = HSPF, mfg / 0.582$ and $SEER, corr = SEER, mfg / 0.941$. The energy uses of all components (i.e. compressor and distribution fan/blower; and crank case heater) shall then be added together to obtain the total energy uses for heating and cooling.

Amendment TECH: 2004--13 – Correction of Local Climate Conditions and Proper Sizing for Heat Pumps and Air Conditioners

Chapter 3,B.6.b.(7) – Amend as follows:

(7) ~~Corrections for climate conditions and mis-sizing of equipment, using correction factors to HSPF, SEER, and AFUE that are established or shall be approved by the accrediting body and be consistent for all HERS providers operating within a state as follows:~~

Manufacturer's Equipment Performance Ratings (e.g., HSPF, SEER, AFUE) shall be corrected for local climate conditions and mis-sizing of equipment. To determine equipment mis-sizing, the capacity of heating and cooling vapor compression equipment shall be calculated in accordance with ACCA Manual J Eighth Edition, ASHRAE 2001 Handbook of Fundamentals, or an equivalent computation procedure, using the following assumptions:

- a. For the HERS Reference home:
 - i. Indoor temperatures shall be 75 F for cooling and 70 F for heating.
 - ii. Outdoor temperatures shall be the 99.0% and 1.0% design temperatures as published in the ASHRAE Handbook of Fundamentals for the city where the home is located or the most representative city for which design temperature data are available.
 - iii. Infiltration rate in air changes per hour (ach) shall be:
 - for summer: $1.2 * nL * W$
 - for winter $1.6 * nL * W$
 - where: $nL = 0.48$
 - $W =$ Weather factor from W Tables in ASHRAE Standard 136
 - iv. Mechanical ventilation shall be 0 (zero)
 - v. All windows shall have blinds/draperies that are positioned in a manner that gives an Internal Shade Coefficient (ISC) of .70 in the summer and an ISC of .85 in the winter. These values are represented in ACCA Manual J 8th Edition as “dark closed blinds” in the summer and “dark, fully drawn roller shades” in the winter.
 - vi. Internal heat gains shall be 1,600 Btu/hr sensible for appliances plus 230 Btu/hr sensible and 200 Btu/hr latent per occupant, with the number of occupants equal to the number of bedrooms plus one.
 - vii. Heat pump equipment shall be sized to equal the larger of the heating and cooling season calculations in accordance with these procedures.
 - viii. Systems shall be smaller than the size calculated using this procedure plus 100 Btu/hr.
- b. For the Rated home:

- i. Indoor temperatures shall be 75 F for cooling and 70 F for heating.
- ii. Outdoor temperatures shall be the 99.0% and 1.0% design temperatures as published in the ASHRAE Handbook of Fundamentals for the city where the home is located or the most representative city for which design temperature data are available.
- iii. Infiltration rate shall be either the measured envelope leakage area converted to equivalent natural air changes per hour (ach,nat) or the default value derived above for the Reference home modified as follows:
 - for summer: either 1.2* ach,nat or 1.2* nL * W
 - for winter: either 1.6* ach,nat or 1.6* nL * W
 - where: nL = 0.48
 - W = Weather factor from W Tables in ASHRAE Standard 136
- iv. Mechanical ventilation shall only be included for systems that are controlled to run every hour or every time the HVAC system operates. Standard bathroom and kitchen ventilation may not be considered as ventilation for sizing purposes.
- v. Combined infiltration and ventilation may not be less than the ventilation rates required by ASHRAE Standard 62 nor greater than nL*W*1.2 in summer and nL*W*1.6 in winter.
- vi. Windows shall include observed blinds/draperies. For new homes, all windows shall assume blinds/draperies that are positioned in a manner that gives an Internal Shade Coefficient (ISC) of .70 in the summer and an ISC of .85 in the winter. These values are represented in ACCA Manual J 8th Edition as “dark closed blinds” in the summer and “dark fully drawn roller shades in the winter.
- vii. Internal heat gains shall be 1,600 Btu/hr sensible plus 230 Btu/hr sensible and 200 Btu/hr latent per occupant, with the number of occupants equal to the number of bedrooms plus one.
- viii. Heat pump equipment shall be sized to equal the larger of the heating and cooling season calculations in accordance with these procedures.
- ix. To the degree that the installed equipment for the Rated home exceeds properly sized equipment in accordance with the above procedures, the Manufacturer’s Equipment Performance Rating shall be degraded accordingly.

Renumber all subsequent sections accordingly.

Amendment TECH: 2004-14 – Biomass Fuels Efficiencies

Chapter 3,A.3. A.3. Definitions and acronyms – Add:

Biomass Fuel – Non-liquid and non-gaseous combustible substance burned to create energy, such as chunk wood, wood chips, corn husks, etc.

Biomass System – A biomass fuel combustion device and all associated mechanisms, controls, venting and heat delivery components designed to provide space heating.

Chapter 3.B.2. Rating point score and star rating - Add to Table 1. Coefficients a' and b:

:

Fuel Type and End Use	a	b
Biomass space heating	1.0145	0.6103

Chapter 3.B.4. Calculation Procedure – Amend as follows:

Table 3. Specifications for the HERS Reference and Rated Homes

Add to within the row on “Heating systems” the following:

Building Component	<i>HERS Reference Home</i>	<i>Rated Home</i>
Heating systems	Biomass system: 63% efficiency	Same as Rated Home

Table 3a. Default HERS Reference Home Heating and Cooling Equipment Efficiencies

Add row to end of table:

Rated Home Fuel	Function	Reference Home Device
Biomass System	Heating	63%

Add the following to the notes under Table 3a (Amendment 068):

Biomass fuel systems should not be included in ratings when then are considered “supplemental systems”, i.e. where an automatic system, sized to meet the load of the house exists. Biomass systems should only be included in the rating in those situations where the automatic heating system is not large enough to meet the load of the house, and a biomass fuel system is in place to meet the balance of the load, or where there is only a biomass fuel system in place. In the situation where there are two systems that together meet the load, the biomass system shall be assigned only that part of the load that can not be met by the automatic system.

Chaper 3.B. 5. - Minimum Rated Features - Add new table similar to current Table 8, but for solid fuels, such as the following:

Table XX.. Default Solid Fuel Combustion Seasonal Efficiencies for Space Heating

<u>Type</u>	<u>Location</u>	<u>Seasonal Efficiency</u>	<u>Notes</u>
<u>EPA Listed Stove, Furnace or Boiler</u>	<u>Conditioned space</u>	<u>EPA “Certified Wood Heaters” list</u> Http://www.epa.gov/compliance/resources/publications/monitoring/programs/woodstoves/certifiedwood.pdf	
<u>EPA Listed Stove, Furnace or Boiler</u>	<u>Unconditioned space</u>	<u>0.85 of EPA listing</u>	
<u>EPA Stove – Not listed</u>	<u>Conditioned space</u>	<u>60%</u>	<u>For stoves with documented EPA compliance, but not found on EPA’s web site list of certified stoves</u>
<u>EPA Stove – Not listed</u>	<u>Unconditioned space</u>	<u>50%</u>	<u>For stoves with documented EPA compliance, but not found on EPA’s web site list of certified stoves</u>
<u>EPA Listed Stove Insert</u>	<u>Enclosed, such as in fireplace</u>	<u>Subtract 10% from listed seasonal efficiency</u>	
<u>Non-EPA Stove</u>	<u>Conditioned space</u>	<u>50%</u>	<u>Not tested or listed by EPA</u>
<u>Non-EPA Stove</u>	<u>Unconditioned space</u>	<u>40%</u>	<u>Not tested or listed by EPA</u>
<u>Biomass Fuel Furnace or Boiler with distribution system</u>	<u>Conditioned space</u>	<u>50%</u>	<ul style="list-style-type: none"> <u>Not tested or listed by EPA</u> <u>Distribution system efficiency shall also be considered</u>
<u>Biomass Fuel Furnace or Boiler with distribution system</u>	<u>Unconditioned space</u>	<u>40%</u>	<ul style="list-style-type: none"> <u>Not tested or listed by EPA</u> <u>Distribution system efficiency shall also be</u>

			<u>considered</u>
<u>Biomass Fuel Furnace or Boiler with distribution system</u>	<u>Outside</u>	<u>30%</u>	<ul style="list-style-type: none"> • <u>Not tested or listed by EPA</u> • <u>Distribution system efficiency shall also be considered</u>
<u>Solid Fuel Furnace or Boiler – Independently Tested</u>	<u>Central with ducted or hydronic distribution</u>	<u>0.85 of tested listing</u>	<ul style="list-style-type: none"> • <u>Only permitted with documentation of independent testing lab documentation</u> • <u>Distribution system efficiency shall also be considered</u>

Amendment TECH: 2004-15 – Home Inspection Standards

Chapter 3, C.2. – Amend as follows:

2. Site data collection manual. All HERS providers shall provide raters with a manual containing procedures for the on-site collection of data that ~~are~~ at a minimum shall include the on-site inspection procedures for minimum rated features for new and existing homes provided in appendix A.

a. ~~Consistent with those provided in Appendix A, as extracted from Guideline No. 10 of the Home Energy Rating Systems Council Guidelines.~~

b. ~~Established or approved by the Accrediting Body and updated as supplemental or revised information becomes available.~~

Amendment TECH 2004-17 – Definition of Home

Chapter 3, A.3. – Amend as follows:

Home - A building with one or more dwelling units that has three or fewer stories above grade, or a dwelling unit within a building of three or fewer stories above grade. ~~A one or two family dwelling or multi-family dwelling of three stories or less.~~

Amendment TECH 2004-18 – Future Guideline Requirements

Proponent: RESNET Amendment Drafting Committee

Chapter 3, C.1.b - Delete in entirety.

Amendment ADMIN: 2004-01 – Rater Financial Interest Disclosure

Chapter 1, 4.C. – Amend as follows:

4.C. Minimum Standards for Home Energy Rating System's Operating Policies and Procedures shall be written and provide for the following:

6. Written conflict of interest provisions that prohibit undisclosed conflicts of interest but allow waiver with advanced disclosure. The "Home Energy Rating Standard Disclosure" form adopted by the RESNET Board of Directors shall be completed for each home that receives a Home Energy Rating and shall be provided to the rating client and made available to the home owner/buyer. Each form shall include, at a minimum, the name of the community/ subdivision and city and state where the home is located. Each form shall accurately reflect the proper disclosure for the home that it is rated (i.e. it should reflect the Rater's involvement with the home at the time the final rating is issued). For the purposes of completing this Disclosure, "Rater's employer" is defined as including any affiliate entities. Recognizing that a number of different relationships may occur between the Rater or the Rater's employer and the rating client and/or homeowner and/or the marketplace in general, the Rating Provider shall ensure that all disclosures are adequately addressed by the Provider's quality assurance plan, in accordance with the relevant Quality Assurance provisions of the Standards. For example, raters could be allowed to install measures recommended by the rating with advanced disclosure to the home owner and the home energy rating system of financial and other interests.

Chapter 3, B..3.a. – Amend as follows:

B.3.a

- (9.) The following statement in no less than 8 pitch font, "The Home Energy Rating Standard Disclosure for this home is available from the Rating Provider". At a minimum, this will include the Provider's mailing address and phone number.

Amendment ADMIN: 2004-02 – Testing and Verification of Rating Software Programs

Chapter 1, 4.E. – Amend as follows:

E. A home energy rating provider shall provide documentation that ~~their ratings are produced by a RESNET accredited home energy rating software program that~~ the energy rating software program that is used to produce energy ratings has successfully passed the “ RESNET Rating Software Testing Specifications and Verification Procedures” to ensure that the rating software program complies with the national home energy rating technical standards that are contained in Chapter Three of these standards. The RESNET Rating Software Testing Specifications and Verification Procedures are posted on RESNET’s web site at www.natresnet.org.

Amendment ADMIN: 2004-03 – Rating Software Documentation

Chapter 1, 4.E.1. – Amend as follows:

1. A home energy rating provider shall provide documentation with its accreditation application that their ratings are produced by a properly licensed RESNET accredited home energy rating software program that complies with the national home energy rating technical standards that are contained in Chapter Three of these standards.

Amendment ADMIN: 2004-04 – Using Updated Rating Software

Chapter 1 , 6.H. – Amend as follows:

Should changes that affect the calculated results of the home energy rating occur in the engineering algorithms of the home energy rating system's tool, the home energy rating system will be required to submit verification that the tool continues to meet the BESTEST criteria for accreditation purposes. Providers shall also be required to use one of the currently approved versions of their chosen software as posted on RESNET's web site, as follows:

6.H.1. Transition period: on release announcement of a new software version, providers have a maximum of 60 days to begin all new ratings with the new version.

6.H.2. This requirement only applies to changes mandated by the technical standard or otherwise affecting the calculations of the rating score or projected energy savings.

6.H.3. Persistence: once a projected rating has been made on a property, the version of the rating software that was used initially may be used for the final rating on that property. Providers, at their option, may update the software version for in-process ratings.

Amendment ADMIN: 2004-05 – Period of Rating Provider Accreditation

Chapter 1, 6.A. – Amend as follows:

A. Home energy rating system application for renewal

Home energy rating systems shall submit an “Application for Renewal” no later than 120 days prior to the expiration of the current accreditation period. Renewal shall be required annually ~~every three years~~ after the issuance of the unique accreditation registration number by the Mortgage Industry Home Energy Rating System Accreditation Committee. Renewal applications will be processed in the same manner as an initial application.

Amendment ADMIN: 2004-06 – Rater Continuing Education Requirements

Chapter 1, 4.B. 3. – Amend as follows:

3. Continuing Education – 12 hours of approved continuing education units of education and training approved by the rating provider every three years during the three years of certification. 10 hours of the training shall be training approved by RESNET.
4. Rater Testing – All certified energy raters shall take the national home energy rater test administered by RESNET by January 1, 2008.

Amendment TNG: 2004-01 – Rater Trainer Testing

Chapter 2, 2. - Add two definitions:

Certified Rater Trainer – Class instructor who has demonstrated, by means of passing the RESNET National Rater Trainer Competency Test, mastery of the building science and rating system knowledge, and competency necessary to effectively teach rater training courses.

RESNET National Rater Trainer Competency Test – Certification test developed and administered by RESNET to ensure that accredited rater training providers' trainers have the requisite knowledge and competence to serve as trainers for prospective Certified Rater. The test is based upon the national core competency exam developed and maintained by RESNET.

Chapter 2, 4.1.5 – Amend as follows:

4. Accredited Training Providers

4.1.5 Maintain certified trainers, who have been certified by RESNET by passing the National Rater Trainer Competency Test, and ~~knowledgeable instructors and trainers who as individually or as a team satisfy the minimum instructor and trainer competencies in accordance with Section 5 of this Standard Chapter~~

Chapter 2, 5.1 – Amend as follows:

5.1 The following compromise a list of the knowledge base and skills set for Home Energy Ratings. Training Providers shall use a Certified Trainer who has successfully passed the RESNET National Rater Training Competency Test ~~demonstrate that their Trainers and Instructors individually or as a team, have a comprehensive mastery of this knowledge base and skills set and that their ...~~

Chapter 2, 6.1 – Amend as follows:

6.1 Minimum Rater Training Provider Competencies. A Rater Training provider shall maintain Certified Trainers ~~and Instructors of demonstrating individually or as a team~~ the following skills:

Chapter 2, 6.1.1 – Amend as follows:

6.1.1 Mastery of the Home Energy Rating System knowledge base and skills set given by Section 5 of this Chapter Standard. The Certified Trainers shall demonstrate these skills by passing the RESNET National Rater Training Competency Test.

Chapter 2, 8. – Amend as follows:

8.1 Certified Rater Trainer

8.1.1. National core competency test. RESNET shall directly administer the National Rater Training Competency Test to prospective rater trainers seeking certification. The rater training provider seeking accreditation shall submit the names of certified rater trainers they intend to use, which RESNET shall verify have passed the RESNET National Rater Training Competency Test.

8.1.1.1 Core Test questions

8.1.1.2 Overseen by a proctor. A proctor is an individual designated by RESNET to oversee the written National Rater Training Competency examination.

8.1.1.3 Time limited

8.2 Rater Candidates

8.2.1. Written examination. Examinations may be given at completion of classroom training or may be given in the form of a “challenge” exam to individuals who have not undergone classroom training.

8.2.1.1 Core test questions

8.2.1.2 Open book (& student notes)

8.2.1.3 Overseen by a proctor. A proctor is an individual designated by the Accredited Training Provider to oversee the written examination.

8.2.1.4. Time limited

Chapter 2, 9 – Amend as follows:

9. ~~Rater~~ Continuing Education

9.1 Certified Rater Trainer Continuing Education

Continuing education units shall be ~~recommended~~ recognized by RESNET and be a minimum of twelve hours annually.

9.2 Continuing education units shall be approved by the Accredited Rating System Provider and shall consist of the number of hours required by the *Mortgage Industry National Home Energy Rating System Accreditation Procedures*.

Amendment TNG: 2004-02 – Administration of National Rater Test

Chapter 2.2. – Add:

National Core Rater Test – Computer based examination Test developed by the National Rater Training Provider Accreditation Committee and administered by the Residential Energy Services Network (RESNET).

Chapter 2.4 – Amend as follows:

4.1.1 Hold the national core competency questions of the national test administered by RESNET in the strictest confidence., ~~not allowing any copies to leave the premises of examination locations and not allowing review of by any individual that is not proctoring the national core test. external to the employ of the Training Provider, except as required for accreditation, accreditation renewal or grievance or disciplinary purposes as prescribed by this standard.~~

The privilege to make and use any trademarked, copyrighted or otherwise restricted materials other than the national core test developed by the National Accreditation Body for marketing Rater Training Course or Training Providers or for recruiting Rater trainees, instructors or trainers.

Chapter 2.5.1. – Amend as follows:

The following comprise a list of the knowledge base and skills set for Home Energy Ratings. Training Providers shall demonstrate that their Trainers and Instructors, individually or as a team, have a comprehensive mastery of this knowledge base and skills set and that their training curricula are sufficiently comprehensive to effectively teach ~~teach~~ these materials to prospective Home Energy Raters (See Section 6.1). Prospective Home Energy Raters, to become certified, shall demonstrate through passing the RESNET national core test and other Training Provider written examinations and observations ~~observer~~.

Chapter 2.6.2 – Amend as follows:

Minimum Rater Competencies. A Certified Rater shall pass examinations comprising, at a minimum, the RESNET national core test that is administered by RESNET ~~competency questions~~ and complete a minimum of two ratings in the presence of a trainer.

Chapter 2.7.2. – Amend as follows

Certified training requires that the Rater trainee pass a written examination comprising, at a minimum, the RESNET National Core Test administrated by RESNET, ~~national core competency questions~~ and complete a minimum of two ratings in the presence of a trainer.

Chapter 2.8.1. – Amend as follows:

Written examination. Examinations may be given at completion of classroom training or may be given in the form of a “challenge” exam to individuals who have not undergone classroom training.

8.1.1 RESNET National Core Test administered by RESNET. ~~Core test questions~~

8.1.2 Provider test questions

8.1.3 Open book (& student notes)

8.1.4 Overseen by a proctor. A proctor is an individual designated by RESNET to oversee the National Core Test and by the Accredited Training Provider to oversee other written examination.

8.1.5 Time limited

Amendment TNG: 2004-03 – Rater Training Provider Accreditation Committee

Chapter 2,3. – Amend as follows:

3.1 Composition. The TPAC shall be composed of an equal number of representatives from Accredited Rater Training Providers, Accredited Rating System Providers, and Certified Home Energy Raters, who shall be appointed by and serve at the pleasure of the National Rater Training Provider Accreditation Body RESNET Board of Directors.

3.2 ~~Membership term~~ Vacancies. The term of service for the members of the TPAC shall be staggered such that one-third (1/3) of the membership is replaced each year. ~~The term of service of each member of the TPAC shall be 3 years. Members may re-appointed for a succeeding 3-year term only once.~~ Vacancies shall be filled by the TPAC RESNET Board of Directors.

Amendment TNG: 2004-04 – Data Analysts and Data Collectors

Chapter 2,2.

Certified Home Energy Rater or Rater – The person trained by an accredited Training Provider and certified by an accredited home energy Rating Provider to perform the functions of both a data collector and data analyst, and to inspect a home to evaluate the minimum rated features and prepare an energy efficiency Rating. This definition does not prohibit a home energy Rating Provider from having multiple classes of raters leading to a Rater that performs all of the functions of a home energy rating. This definition does not restrict a rater from having other individuals perform the functions of data collection and data input. The Certified Home Energy Rater, however, is responsible for the accuracy of the information contained in the rating.

~~***Data Analyst*** – A person trained to enter the information compiled by a data collector into the rating tool and to produce the energy efficiency rating of a home.~~

~~***Data Collector*** – A person trained to evaluate the minimum rated features of a home on site or from construction documents for a proposed home and collect all the information required to create a rating.~~

Amendment TNG: 2004-05 – Minimum Rater Competencies

Chapter 2, 6.2 – Amend as follows;

6.2 Minimum Rater Competencies. A Certified Rater shall pass examinations that demonstrate a practical, working ability to effectively use the knowledge base and skills set contained in Sections 5.2 and 5.3 of this Standard to produce accurate and fair Home Energy Ratings. This examination may either follow training or it may be taken as a challenge examination. Specifically, a Certified Rater shall demonstrate the following skills:

Amendment BOP: 2004-01 – Building Package Option Provider Accreditation

Add New Chapter 4, renumber current Chapter 4 to Chapter 5:

RESNET ENERGY STAR Homes Program Accreditation Procedures for Builder Option Package Providers

Incorporate language of standard proposed on RESNET's web site at <http://www.natresnet.org/bop/bopstan.pdf>.

With following proposed amendments: 5.D

2.a. Monthly energy savings

For a Fannie Mae energy efficient mortgage, the BOP provider shall calculate the monthly energy savings that the BOP achieves over the HERS Reference Home in accordance with the provisions of Section B.3.b. (2) of this Chapter.

2.b. Energy Value

For a Fannie Mae energy efficient mortgage, the BOP provider shall calculate the energy savings value of the BOP in accordance with the provision section B.3.b. (2) of Chapter 3 of this standard.

3. Specialized requirements

Where specific BOP's approved by EPA have technical requirements that are outside the normal range of BOP inspector skills, specialized training shall be provided to inspectors by the BOP provider in order to inspect for compliance with those BOP's.

5.B.3

Ten hours of the training shall be training approved by RESNET.

Amendment AMEND: 2004-01 - Amendment of Standards

Chapter 4, C.1. – Amend as follows:

- d. Proposals for change receiving two-thirds majority support from the Revision Evaluation Committee after public comment shall be incorporated into a set of proposed revised accreditation procedures amendments that will be submitted to the RESNET Board of Directors for final approval.
- e. Proposed revisions from the Revision Evaluation Committee shall be approved by a simple majority of the RESNET Board of Directors. Rejection of proposals from the Revision Evaluation Committee shall require a two-thirds majority of the RESNET Board of Directors. Upon approval by the RESNET Board of Directors the changes shall be incorporated into a set of revised standards. If a proposed revision fails to receive either a simple majority vote for approval or a two-thirds majority vote for rejection, it will be referred back to the Revision Evaluation Committee for further consideration.

EFFECT: 2004-01 Effective Date of Amendments

The effective date of the amendments to Chapters One, Two and Four of the standard is April 1, 2005.

The effective date of the amendments to Chapter Three is January 1, 2006.

Once a projected rating has been made on a property, the version of the rating software that was used initially may be used for the final rating on that property.