



Setting the Standards for
Home Energy Efficiency

Standard Amendment # 2017-05

Title: MINHERS Chapter 2 -2013 Addendum 24 Certification
Date Approved: January 16, 2017
Date Effective: February 16, 2017
Committee: Standards Development Committee 200, Education, Training and Certification

Justification:

Across the nation the RESNET HERS Index Score is fast becoming a mainstream in the housing market. Homebuilders are having their homes energy rated and are marketing the HERS Index Score of their homes. Multiple Listing Services (MLS) are incorporating the HERS Index Scores in their listings and code jurisdictions are recognizing a HERS Index Score as a building energy code compliance option. With the increased visibility of the HERS Index Score, RESNET is obligated to ensure that HERS Index Scores are as consistent as possible.

This need has been made more important with the International Code Council adopting an Energy Rating Index option to the 2015 International Energy Conservation Code.

RESNET has embarked on a comprehensive effort to enhance the consistency of HERS Index Scores nationally. This includes the upgrading of its quality assurance standards and procedures.

A key component for ensuring the consistency of the HERS Index is a robust process for the instruction, assessment and certification of HERS Rater and Rating Field Inspector candidates.

RESNET is proposing a set of amendments to its candidate certification process. Major elements of the proposed changes are:

- Redefined and made rational the instruction, assessment, certification and re-certification of Rating Field Inspector (RFI) and HERS Rater candidates.

- Clarified the relationship between instruction and certification of RFI and HERS Rater candidates. This is intended to bridge the current gap in the responsibilities between Rater Training Providers and HERS Quality Assurance Providers on the assessment of HERS Rater candidates.
- Redefined the role of a Rater Trainer to be a Rater Instructor and created a Rater Candidate Field Assessor responsible for oversight of candidate probationary ratings.
- Changed HERS Rater recertification requirements by removing Professional Development and replacing with field testing.

Modifications to the chapter are given below in underline/strikeout format

Chapter Two

RESNET Standards

RESNET Standards

National Standard for Instruction, Assessment ~~Training~~ and Certification

201200

~~PURPOSE AND SCOPE~~

201200.1

Purpose

The purpose of these standards is to ensure that Home Energy Rater Training is consistent and robust; to increase the credibility of the Training and Quality Assurance Providers with consumers, the housing and mortgage finance industry, federal government, state governments, local governments, utility companies, and the private sector; and to promote voluntary participation in an objective, cost-effective, sustainable home energy rating process.

201200.2

Scope

These standards define the requirements of Accredited Training Providers, Certified Rater Instructors, and Certification Candidates. RESNET shall confirm that the requirements defined in this standard have been met when accrediting training providers and certifying Rater Instructors. Accredited Rating Quality Assurance Providers shall confirm that the requirements defined in this standard have been met when certifying individuals. This enhances the goal of producing a nationally recognized and uniform program.

201.3 ~~Definitions and Acronyms~~

~~See Appendix B.~~

202

~~GENERAL PROVISIONS~~

201.1 ~~Definitions and Acronyms~~

~~See Appendix B.~~

~~202.1 Training and Education Committee~~

~~202.1.1 Committee Responsibilities~~

~~The Training and Education Committee considers, reviews, and approves the following items:~~

~~202.1.1.1 Core competency examination questions, categories, time limits, and passing scores;~~

~~202.1.1.2 Subject categories that may be approved for Professional Development (PD) requirements for RESNET certified individuals.~~

~~202.1.2 Committee Chair~~

~~A member of the Board of Directors chairs the Training and Education Committee. RESNET Staff and the Board Chairperson nominate individuals to be the committee chair. Appointment of the committee chair requires majority approval of the Board.~~

~~202.1.3 Committee Members~~

~~The Committee Chair appoints individuals for committee membership. The RESNET Board of Directors retains the right to revoke individual committee membership.~~

~~202.1.4 Sub-Committees~~

~~Sub-committees may be formed to complete specific tasks. The chair of the Training and Education Committee appoints the sub-committee chairs. Sub-committee chairs and members need not be members of the Committee.~~

203202

ACCREDITED TRAINING PROVIDERS

203202.1 Achieving Accreditation

— Training Providers are accredited in accordance with the Accreditation Process specified in *Section 910911.2 - Provider Accreditation Process*. Training Providers shall complete the RESNET Rater Training Provider Accreditation Application ~~demonstrate through the following documentation that their training meets the criteria established through this Standard.~~

~~Training curriculum, materials, and manuals:~~

~~203.1.1 Examination materials.~~

~~203.1.2 Facilities description.~~

~~203.1.3 Organization description.~~

~~203.1.4 Principals and staff qualifications (detailed resumes).~~

~~203.1.5 The names of certified Rater Trainers it intends to teach classes.~~

203202.2 Maintaining Accreditation

— In order to maintain their accreditation in good standing, all Accredited Training Providers shall fully discharge the following duties and responsibilities. Failure to properly discharge any of these duties and responsibilities constitutes grounds for disciplinary action in accordance with *Section 9112 -- Probation, Suspension, and Revocation of Accreditation*.

203202.2.1 Renew their accreditation in accordance with the renewal process found in *Section 910911.3 - Accreditation Renewal Process*.

203202.2.2 Maintain ~~certified-Certified Rater Instructors~~~~rater trainers~~. Only RESNET ~~certified-Certified~~ Rater ~~Instructors~~~~Trainers~~ can offer rater training through a RESNET ~~accredited-Accredited Rater~~-Training Provider.

203202.2.3 Hold the exam questions administered by RESNET in strictest confidence.

203202.2.4 Maintain records for three years of all training materials and trainee data, training schedules, curricula, attendance records, examinations and individual examination results. *This information shall be made available to RESNET upon request by RESNET.*

203202.2.5 Provide candidates with a certificate or letter of completion, which accurately includes the candidate's legal name and completion dates of any items required for the candidate's certification.

203202.2.6 Maintain curricula that align with the most up-to-date RESNET standards.

203202.2.7 Provide for training facilities and equipment appropriate to the training being delivered.

203202.2.8 Only RESNET ~~accredited-Accredited~~ Training Providers ~~can~~may offer Rater Training using ~~certified-RESNET~~ ~~certified-Certified~~ Rater ~~Instructors~~~~Trainers~~.

203202.3 Privileges and rights

Accredited Training Providers in good standing have the following privileges and rights:

203202.3.1 The privilege to make and use any materials trademarked, copyrighted, or otherwise restricted by RESNET (other than the tests developed by RESNET) for marketing Training Courses or Training Providers or for recruiting Rater trainees, instructors or trainers.

203202.3.2 The right to present evidence, arguments and a vigorous defense in any action brought under these standards by any party against an Accredited Training Provider.

203202.4 Revocation of Accreditation

See *Chapter 9 – RESNET National Standard for Quality Assurance*.

**2043
TRAINERS**

CERTIFICATION OF RATER INSTRUCTORSCERTIFIED

204203.1 Achieving Certification

Individuals shall meet the following requirements to be certified as a RESNET Certified Rater Instructor. Only RESNET ~~certified~~Certified Rater Instructors ~~can~~may conduct rater instruction under the auspices of a RESNET ~~accredited~~Accredited Training Provider.

~~204203.1.1~~ Demonstrate ability to effectively communicate with adults in a training ~~environment~~. This ability is demonstrated through completion of a minimum sixteen ~~(16)~~ hour RESNET approved adult education program.

~~204203.1.2~~ Demonstrate mastery of the Home Energy Rating System knowledge and ability sets provided in Section 207 - Capabilities. Mastery is demonstrated by ~~passing the RESNET National Rater Training Competency Test with a minimum score of 90%~~completing the following RESNET tests with a minimum (passing) score to be determined by RESNET.

~~203.1.2.1~~ National Rater Instructor Competency Test

~~203.1.2.2~~ RESNET Combustion Appliance Test

~~203.1.2.3~~ RESNET Rater Simulation Practical Test

~~204.1.3~~ Demonstrate mastery of the Home Energy Rating System knowledge and ability sets provided in Section 207 - Capabilities. Mastery is demonstrated by passing the following three exams with a minimum score of 90%: ~~The RESNET National Rater Training Competency Test, the RESNET Combustion Appliance Test, and The Work Scope Development Tests including the simulation exam.~~

~~204.1.4~~ Have an understanding of the purposes and benefits of home energy surveys, home energy ratings, and the ability to communicate these benefits to students.

~~204.1.5~~ Have a basic understanding of energy efficient mortgages, energy improvement mortgages and related products, and the ability to communicate these to students.

~~204.1.6~~ Beginning on January 1, 2015, as a certified Home Energy Rater, complete a minimum of twenty five (25) Home Energy Ratings. These 25 Ratings shall have met the minimum quality assurance processes defined in Section 903.4. Trainers who were certified prior to the adoption of this amendment will have until January 1, 2017 to complete the required number of certified ratings.

204203.2

Professional Development (PD)

RESNET Certified Trainers-Rater Instructors shall complete a two-hour annual RESNET Roundtable on current information each year and also complete at least one of the following items every three years:

203.2.1 Document twelve (12) hours of attendance at the RESNET conference or other conference approved by RESNET; and

203.2.2 Complete eighteen (18) hours of RESNET approved Professional Development courses delivered by RESNET Accredited Training Providers or other events or venues approved by RESNET. Additional documented hours of attendance at RESNET Conferences qualify under this provision.

~~204.2.1 Document twelve (12) hours per year of attendance at RESNET conferences, or RESNET approved Professional Development courses delivered by accredited~~

~~204.2.2 RESNET Training Providers, or RESNET sessions at Affordable Comfort Institute conferences, EEBA conferences, or other events and venues as approved by RESNET.~~

~~204.2.3 Instruct a minimum of thirty-six (36) hours of RESNET Certification or Professional Development per year, documented by an Accredited Training Provider in accordance with Section 203.2 – Maintaining Accreditation.~~

An individual that is both a Certified Rater Instructor-Trainer and Quality Assurance Designee shall complete both the two-hour RESNET roundtable for Certified Rater Instructors-Trainers and the two-hour roundtable for Quality Assurance Designees. ~~Individuals selecting the additional PD option need only comply with the requirement one time. i.e. 24 hours is not required.~~

~~204~~203.3 **Revocation**

~~The following items are ground for revocation of RESNET certified-Certified Rater trainer-Instructor designation.~~

~~204203.3.1 Compromising the security or integrity of any RESNET certification examtest.~~

~~204203.3.2 Intentionally misrepresenting their Accredited Training Provider by training to curricula ~~that differ from that submitted. on the provider's training provider application.~~~~

~~204203.3.3 Violation of RESNET defined test-proctoring procedures.~~

~~204203.3.4 Non-payment of RESNET provider accreditation fees.~~

204. CERTIFICATION OF CANDIDATE FIELD ASSESSORS

~~—204.1—~~ **Achieving Certification**

Individuals shall meet the following requirements to be certified as RESNET Candidate Field Assessor.

~~—204.1.1~~ **Certified HERS Rater in good standing.**

~~203~~**204.1.2** As a certified Home Energy Rater, complete confirmed ratings on a minimum of twenty-five (25) homes prior to becoming a Candidate Field Assessor. These 25 homes shall have met the minimum quality assurance processes defined in Section 904.4 – Quality Assurance of Raters and Ratings.

~~205-~~ **CERTIFICATION CANDIDATES**

~~—205.1—~~ **General Provisions**

~~205.1.1~~ **Training Rater Instruction**

~~All Rater Candidates are required to complete Rater instruction delivered by a RESNET Accredited Rater Training Provider.~~

~~205.1.2~~ **Examinations**

Examinations allow a candidate to demonstrate the knowledge required appropriate to their desired certification. RESNET online examinations are time-limited and open-book allowing any reference materials but excluding any form of communication with other individuals during the examination session. ~~Examinations~~**Written examinations** are administered by RESNET, ~~set up and overseen by a RESNET Accredited Training Provider certified trainer and overseen by a RESNET approved or their designated~~ proctor. Approved proctors include BPI exam proctors, faculty and staff of libraries, trade schools, colleges, independent testing institutions, or others as approved by RESNET. Approved proctors shall adhere to RESNET's defined test proctoring procedures.

~~—205.1.3~~ **Simulated Practical Examinations**

Simulated practical examinations allow a candidate to demonstrate their ability to perform certain tasks appropriate to their desired certification. . Rater practical examinations shall be administered ~~by through the RESNET and will include: Rater Simulation Practical Examination.~~ Rater practical examinations shall be administered by RESNET and will include:

~~—205.1.2.1~~ **Rater Simulation Practical Test**

~~205.1.32.1.1~~ **For new Candidates** ~~t~~The effective date for the RESNET Rater Simulation Practical Test is July 1, 2016. Raters who were certified prior to July 1, 2016 shall pass the RESNET Rater Simulation Practical Test prior to July 1, 2017.

205.1.2.2 RESNET Combustion Appliance Simulation Test.

205.2 ~~_____~~ – Certification

Prior to issuing a candidate's certification, a RESNET ~~a~~Accredited Rating Quality Assurance Provider shall confirm that the candidate has completed at a minimum, all of the following tasks appropriate to their desired certification within a 12-month period (unless otherwise indicated). Only RESNET ~~a~~Accredited Rating Quality Assurance Providers may certify candidates ~~for the certifications~~. Rating Providers may require candidates have successfully completed additional training instruction beyond these requirements as needed to address their specific program, climate, software, or administrative requirements.

~~_____~~ **205.2.1 Home Energy Survey Professional (HESP)**

~~_____~~ **205.2.1.1** ~~Pass~~ Complete the national HESP Exam with a minimum (passing) score ~~of at least 75% to be determined by RESNET~~.

~~_____~~ **205.2.2 Rating Field Inspector (RFI)**

205.2.2.1 Pass the following RESNET Tests: RESNET graded field evaluation using the RESNET JobWerks RFI Tool.

~~204205.2.2.1.1.~~ The RESNET Combustion Appliance Test.

~~205.2.2.1.2~~ RESNET approved graded field evaluations. *(From coordination with Amendment #2017-03 Addendum 19f.)*

~~204205.2.2.1.2.1~~ The RESNET JobWerks RFI Assessment graded field evaluations shall be performed under the observation of a Candidate Field Assessor certified trainer, Quality Assurance Designee, or QAD Delegate.

205.2.2.2 Complete at least three mentored rating field inspections observed by a certified HERS rater or a RESNET Candidate Field Assessor. The certified HERS Rater or RESNET Candidate Field Assessor shall use the RESNET JobWerks RFI Mentoring Tool to document the results of mentored inspections. Complete at least five probationary Rating Field Inspections observed by a certified HERS rater or a quality assurance designee. The certified HERS Rater or QAD shall use the RESNET JobWerks RFI Tool to document the results of probationary inspections. ~~The probationary mentored R rating fField iInspections shall comprise at a minimum the following tasks. The mentored rating field inspections shall comprise at a minimum the following tasks:-;~~

205.2.2.2.1 ~~–~~Use pressure differential diagnostics to identify intermediate buffer zones including (but not limited to) attics, garages, or crawlspaces.

205.2.2.2.2 ~~–~~Identify insulation defects and account for them in energy analysis tool inputs.

205.2.2.2.3 –Identify insulation types, thickness, and alignment with air barriers.

205.2.2.2.4 –Measure pressure differences across the building envelope imposed by the operation of the home's equipment.

205.2.2.2.5 –Perform envelope leakage testing in accordance with the airtightness testing protocols contained in *Chapter 8 – Performance Testing and Work Scope*.

————**205.2.2.2.6** –Perform duct leakage testing in accordance with the duct testing protocols contained in *Chapter 8 – Performance Testing and Work Scope* and —interpret results.

205.2.2.2.7 –Identify room and zone pressure imbalances caused by lack of ducted return air or pressure relief mechanisms such as transfer grilles or jumper ducts.

205.2.2.2.8 –Perform CAZ, spillage, and CO testing in accordance with Carbon Monoxide (CO) Test and Depressurization Test for the Combustion Appliance Zone (CAZ) protocols contained in ANSI/ACCA 12 QH, Appendix A, Sections A4 and A5.

~~205.2.2.2.9 The effective date for item 205.2.2.2.8 is Jan 1, 2014. Rating Field Inspectors who were certified prior to Jan 1, 2014 shall pass the RESNET Combustion Appliance Test, and The Work Scope Development Tests before January 1, 2015.~~

205.2.2.3 ———RFI's shall not complete independent field testing and inspections until they have satisfactorily completed the requisite ~~three~~five mentored probationary ~~r~~Rating ~~f~~Field ~~i~~nspections per 205.2.2.2 and pass the RESNET JobWerks RFI Assessment~~graded field evaluation~~.

205.2.2.4 ———After successfully completing the mentored~~probationary~~ ~~r~~Rating ~~f~~Field ~~i~~nspections and passing the RESNET JobWerks RFI Assessment~~Graded Field Evaluation~~, RFIs may be permitted to conduct all rating tasks contained under Appendix A: ~~“On-Site Inspection~~ns *Procedures for Minimum Rated Features* without having a certified Rater on site.”

205.2.3 Home Energy Rater (HERS Rater)

205.2.3.1 Successfully complete a Rater training course provided through a RESNET Accredited Training Provider that meets the minimum standards as defined in Section 202 – Accredited Training Providers.

205.2.3.1–2 Pass the national HERS Rater test, the RESNET Combustion Appliance Simulation Test with a score of at least 85, the Work Scope Development

~~Test with a score of at least 80 and the RESNET Rater Simulation Practical Test with a score of at least 80% on each exam. Complete the following National RESNET HERS series of tests with the minimum (passing) scores to be determined by RESNET:~~

~~205.2.3.12.1 National HERS Rater Test(s) with a minimum score as determined by RESNET~~

~~205.2.3.12.2 RESNET Combustion Appliance Simulation Test with a minimum score as determined by RESNET~~

~~205.2.3.12.3 RESNET Rater Simulation Practical Test with a minimum score determined by RESNET~~

~~205.2.3.2 Demonstrate competency at certain tasks mentored by a Certified Trainer by completing two training ratings. These ratings shall not contain any errors identified by RESNET approved rating software. Both ratings shall have a reasonably acceptable level of accuracy when compared to the trainer's independent ratings of the same houses or building plans. The Trainer may choose these tasks to be performed in a hands-on environment, from house plans, or through RESNET approved computer simulations. However at least one of the two training ratings shall be a confirmed rating conducted in person with a certified trainer on a real house. The candidate shall perform the following procedures during the confirmed training rating-~~

~~205.2.3.2.1 Use pressure differential diagnostics to identify intermediate buffer zones including (but not limited to) attics, garages, or crawlspaces.~~

~~205.2.3.2.2 Identify insulation defects and account for them in energy analysis tool inputs.~~

~~205.2.3.2.3 Identify insulation types, thickness, and alignment with air barriers.~~

~~205.2.3.2.4 Measure pressure differences across the building envelope imposed by the operation of the home's equipment.~~

~~205.2.3.2.5 Perform building envelope leakage testing in accordance with the airtightness testing protocols contained in Chapter 8.~~

~~205.2.3.2.6 Perform duct leakage testing in accordance with the duct testing protocols contained in Chapter 8 and interpret results.~~

~~205.2.3.2.7 Identify room and zone pressure imbalances caused by lack of ducted return air or pressure relief mechanisms such as transfer grilles or jumper ducts.~~

~~205.2.3.2.8 Identify gas leaks using combustible gas sensing equipment. If a leak is found, recommend that a certified technician repair the leak.~~

~~205.2.3.2.9 Perform CAZ, spillage, and CO testing in accordance with Carbon Monoxide (CO) Test and Depressurization Test for the Combustion Appliance Zone (CAZ) protocols contained in ANSI/ACCA 12 QH, Appendix A, Sections A4 and A5.~~

~~205.2.3.2.10 Raters who were certified prior to January 1, 2014 shall pass the RESNET Combustion Appliance Test and The Work Scope Development Tests before January 1, 2015.~~

205.2.3.3 After passing the all of the RESNET testsexam and completing the two training ratings, but prior to being certified, the candidate shall complete five~~three~~ probationary ratings with a Rating Quality Assurance Provider overseen by a RESNET certified Candidate Field Assessor. At least two~~three~~ of the three~~five~~ probationary ratings shall be confirmed ratings.

205.2.3.4 —A HERS Rater Candidate that does not complete, to the satisfaction of a Quality Assurance Provider, a minimum of three (3) of the five (5) required probationary ratings within fifteen (15) months of passing the National RESNET HERS series of tests as defined in 205.2.3.42, or otherwise does not achieve certification within the allowed fifteen month timeframe, must at a minimum, complete the original requirements and do the following in order to maintain eligibility for certification:

205.2.3.4.1 —Pass the RESNET National Rater Test again; and

205.2.3.4.2 —Complete three (3) additional probationary ratings. One of the three (3) additional probationary ratings shall be a Confirmed Rating and be completed in the presence of a RESNET certified Candidate Field Assessor.

206

RECERTIFICATION

206.1 Certification Renewal

~~—RESNET certified~~To renew certification Home Energy Survey Professionals, Rating Field Inspectors, and HERS Raters, shall renew their certification every three years. They shall complete the following: complete at least one of the following requirements ever three years:

206.1.0.1 Home Energy Survey Professionals

Pass the national RESNET Home Energy Survey Test appropriate to their certification.

206.1.0.2 Rating Field Inspectors

~~Document 18 hours of attendance at RESNET conferences, or RESNET-approved Professional Development courses delivered by accredited RESNET Training Providers, or RESNET sessions at Affordable Comfort Institute conferences, EEBA conferences, or other events and venues as approved by RESNET. PD completed by RESNET-certified individuals prior to achieving a higher certification will be applied toward the PD requirements of their new certification. Pass the RESNET JobWerks Assessment overseen by a RESNET certified Candidate Field Assessor once in a three year period.~~

206.1.3 Certified Home Energy Raters

206.1.3.1 Attend a RESNET approved conference once every three years, OR

206.1.3.2 Complete 18 hours of RESNET approved professional development from a RESNET Accredited Training Provider every three years, OR

206.1.3.3 Successfully complete one JobWerks assessment every three years

~~207-~~ CAPABILITIES

Certified individuals shall have certain capabilities to perform the work required under their certification. The categories listed in this section are contained in *Chapter 3 – National Energy Ratings Technical Standards*, *Chapter 8 -Performance Testing and Work Scope*, and *Appendix A - On-Site Inspection Procedures*. Certification candidates shall demonstrate proficiency at these capabilities through successful completion of certification requirements specified in *Section ~~204~~ 205 - Certification Candidates*. Training providers should ensure their curricula effectively cover these items.

~~207.1-~~ Home Energy Survey Professional (HESP)

- ~~—~~Home Energy Surveys are primarily conducted on existing homes. HESPs do not perform
- ~~—~~any performance, diagnostic, or destructive testing. All capabilities listed here are limited
- ~~—~~to visually accessible items in the home unless otherwise noted.

— **207.1.1 General**

— **207.1.1.1** Have a basic understanding of building performance evaluation.

— **207.1.1.2** Complete a RESNET approved Home Energy Survey form.

— **207.1.1.3** Demonstrate customer communication skills, ethics, and privacy.

— **207.1.2 Basics of specifications**

— **207.1.2.1** Have a basic understanding of energy improvement measure interactions, — expected life, and bundling for optimal performance considering the house-as-a-system and the emerging need for deep energy savings.

— **207.1.3 Health and Safety**

— **207.1.3.1** Identify moisture issues such as condensation, leaks through building components, signs of mold or mildew, insect damage, efflorescence and stains.

— **207.1.3.2** Identify potential combustion appliance safety hazards related to — previous retrofit work.

— **207.1.3.3** Identify evidence in combustion equipment of flame rollout, blocked — chimneys, rust and corrosion, and missing or damaged vent connectors.

— **207.1.4 Building Science Concepts**

— **207.1.4.1** Use appropriate energy terminology and definitions in home energy — survey reports.

— **207.1.4.2** Identify areas of potential envelope leakage, thermal bypasses, and — thermal bridging.

— **207.1.5 Determining Conditioned Space**

— **207.1.5.1** Identify spaces as directly conditioned, indirectly conditioned, or — unconditioned.

— **207.1.5.2** Define the home's thermal boundary and make appropriate — recommendations for changing the thermal boundary.

— **207.1.6 Building Components**

— **207.1.6.1** Identify exterior building components.

—207.1.6.2 Determine building orientation and shading characteristics.

—207.1.6.3 Measure building dimensions and use them to calculate gross and net areas.

—207.1.6.4 Estimate the approximate age of a building.

—207.1.7 Insulation

—207.1.7.1 Identify the presence or absence of insulation and the quality of its installation when visually accessible.

—207.1.7.2 Determine thickness, R-value, and location of insulation.

—207.1.7.3 Recommend levels of insulation by climate zone.

—207.1.8 Building Foundations

—207.1.8.1 Identify foundation type as crawl space, basement, or slab-on-grade.

—207.1.8.2 Identify foundation ventilation system types if present.

—207.1.8.3 Identify location, type, and approximate R-value of foundation insulation systems.

—207.1.9 Framed Floors

207.1.9.1 Identify location and type of floor system, its insulation type, thickness, and approximate R-value.

—207.1.10 Above Grade Walls

—207.1.10.1 Determine wall types, insulation thickness, and approximate R-value.

—207.1.10.2 Identify signs of building additions.

—207.1.11 Windows, doors, and skylights

—207.1.11.1 Identify window and skylight types, frame materials, and permanently installed shading devices.

—207.1.11.2 Determine window, door, and skylight efficiencies and performance factors.

—207.1.12 Rim or Band Joist

—207.1.12.1 Determine insulation type, thickness, and approximate R-value.

—207.1.13 Ceilings

—207.1.13.1 Determine ceiling type, insulation thickness, and approximate R-value.

—207.1.14 Attic

—207.1.14.1 Identify type of attic and location of attic venting.

—207.1.15 Roof

—207.1.15.1 Identify approximate age, type, and color of roofing materials.

—207.1.15.2 Determine approximate R-value if insulated.

—207.1.16 HVAC Systems

—207.1.16.1 Identify types, model numbers, and location of systems.

—207.1.16.2 Determine equipment efficiencies from equipment labels, model numbers or default tables.

—207.1.16.3 Identify HVAC pros/cons, drivers and sensitivities for major system types.

—207.1.16.4 Identify basic combustion appliance concerns.

—207.1.17 Domestic Hot Water Systems

—207.1.17.1 Identify system types and efficiency factors from equipment labels, model numbers, or default tables.

—207.1.18 Air Leakage

—207.1.18.1 Identify common air-leakage sites and indicate likely opportunities for leakage reduction.

—207.1.18.2 Identify mechanical systems likely to cause air-leakage or pressure imbalances.

—207.1.19 Duct Leakage

—207.1.19.1 Determine duct type, location, and R-value.

—207.1.19.2 Identify obvious leakage locations and indications of previous sealing.

—207.1.20 Ventilation Systems

—207.1.20.1 Identify presence and type of exhaust fans and determine whether they —vent to outdoors.

—207.1.21 Appliances and Lighting

—207.1.21.1 Estimate efficiency from model numbers or vintage.

—207.1.21.2 Identify potential lighting upgrades.

—207.2 - Rating Field Inspector (RFI)

A Rating Field Inspector is permitted to conduct all tasks contained within Appendix A. A Certified Rating Field Inspector shall have proficiency at the capabilities of a HESP in addition to the following items.

—207.2.1 General

—207.2.1.1 Use field inspection forms to identify and document the minimum rated —features of the Reference Home and Rated Home in accordance with the —requirements of *Section 303.4 – HERS Reference Home and Rated Home Configuration* and *Appendix A – On-Site Inspection Procedures*.

—207.2.1.2 Identify potential problems with the building such as health and safety —concerns, building durability issues, potential comfort problems, and possible —elevated energy use.

—207.2.1.3 Identify basic home construction types and the ramifications of these for energy usage.

—207.2.2 Determining Conditioned Space

207.2.2.1 Use pressure differential diagnostics to identify intermediate buffer zones including (but not limited to) attics, garages, or crawlspaces.

—207.2.2.2 Determine conditioned space as defined in *Appendix A – On-Site Inspection Procedures*~~Appendix A~~.

—207.2.3 Health and Safety

—207.2.3.1 Identify problems related to poor indoor air quality (IAQ), building —durability, and human comfort.

- 207.2.3.2 Identify potential presence of mold and potential causes.
- 207.2.4 **Moisture Principles and Properties**
 - 207.2.4.1 Identify potential or existing moisture issues (bulk water intrusion, capillary action, air transport, vapor diffusion).
- 207.2.5 **Measuring Building Components**
 - 207.2.5.1 Use construction documents such as building drawings and specification sheets, or actual measured building dimensions to produce a scaled and dimensioned sketch of a home.
- 207.2.6 **Collecting Field Data (including photo documentation)**
 - 207.2.6.1 Determine building orientation.
 - 207.2.6.2 Measure window overhang lengths, heights, and distances from top and bottom of windows.
 - 207.2.6.3 Determine roof slopes, gable heights, etc.
 - 207.2.6.4 Calculate gross and net areas and volumes.
- 207.2.7 **Insulation**
 - 207.2.7.1 Identify insulation types, thickness measurements, common usage locations, and alignment with air barriers.
 - 207.2.7.2 Identify insulation defects, and grading (I, II, III).
- 207.2.8 **Building Foundations**
 - 207.2.8.1 Identify type as crawl space, basement, or slab.
 - 207.2.8.2 Identify ventilation system types.
 - 207.2.8.3 Identify location, type, and R-value of insulation systems.
- 207.2.9 **Framed Floors**
 - 207.2.9.1 Determine if framed floors are exposed to unconditioned, interstitial, or the outdoors.
 - 207.2.9.2 Determine floor system type and frequency of framing members.

—207.2.9.3 Determine insulation thickness, type, and grade (I, II, or III).

—207.2.10 Slab-on-Grade

—207.2.10.1 Identify slab as covered or exposed.

—207.2.11 Above Grade Walls

—207.2.11.1 Determine if walls are exposed to interstitial, unconditioned, or the outdoors.

—207.2.11.2 Determine construction type, thickness, and exterior color.

—207.2.12 Windows and Doors

—207.2.12.1 Identify window labels, framing types and materials, U-factors, reflective and low-e films and coatings, shading and overhangs, and orientation.

—207.2.12.2 Identify exterior door types, insulation, and orientation.

—207.2.12.3 Identify glass-area of exterior doors and windows.

—207.2.13 Heating and Cooling Systems

—207.2.13.1 Determine equipment efficiencies using equipment data (make, model, and nameplate data), AHRI or other current accepted guides, or age-based defaults.

—207.2.13.2 Identify space-conditioning systems as active or passive.

—207.2.13.3 Identify heating system properties: fuel type, burner type, venting type, distribution type, and efficiency.

—207.2.13.4 Identify ground-source heat pumps, air-source heat pumps, and air conditioning systems.

—207.2.13.5 Identify ductless systems (hydronic, steam, electric).

—207.2.13.6 Identify combo systems.

—207.2.13.7 Identify solar thermal systems.

—207.2.13.8 Identify control types (standard thermostats, programmable thermostats, multi-zone controls).

—207.2.13.9 Identify sizing and design issues, control types, and their impacts on energy use and humidity control.

—207.2.13.10 Identify summer and winter design temperatures.

—207.2.13.11 Identify cooling and heating system design trade-offs.

—207.2.14 Gas Leakage Testing

—207.2.14.1 Identify gas leaks using ~~combustion~~combustible gas sensing equipment.

—207.2.15 CAZ Testing

~~207.2.15.1 Perform CAZ, spillage, and CO testing in accordance with Carbon Monoxide (CO) Test and Depressurization Test for the Combustion Appliance Zone (CAZ) protocols contained in ANSI/ACCA 12 QH, Appendix A, Sections A4 and A5. Perform CAZ depressurization, spillage, and CO testing.~~

~~207.2.15.2 Identify room and zone pressure imbalances caused by lack of ducted return air or pressure relief mechanisms such as transfer grilles or jumper ducts. Identify CAZ depressurization issues caused by duct return leaks in the CAZ zone, supply leaks outside the house pressure boundary, zonal pressure imbalances, and/or exhaust appliances including other combustion equipment.~~

~~207.2.15.3 Identify gas leaks using combustible gas sensing equipment. If a leak is found, recommend that a certified technician repair the leak.~~

—207.2.16 Air Leakage

—207.2.16.1 Identify air leakage mechanisms and drivers, energy and comfort implications, and health and safety issues.

—207.2.16.2 Perform single-point and multi-point building envelope leakage testing —in accordance with the airtightness testing protocols contained in *Chapter 8 – Performance Testing and Work Scope*.

—207.2.16.3 Identify potential air sealing using zonal pressure differentials and measurement techniques

—207.2.16.4 Measure pressure differences across the building envelope imposed by the operation of the home's equipment.

—207.2.17 Conditioned Air Distribution Systems

—**207.2.17.1** Identify impacts of designed and imposed flaws (closed interior doors, —blocked registers and grilles, air handler filters, *etc.*).

207.2.17.2 Identify duct supply and return types (flexible, rigid metal, building —chase, —and insulated panels) and locations with respect to thermal and air barriers.

—**207.2.17.3** Identify room and zone pressure imbalances caused by lack of ducted —return air or pressure relief mechanisms such as transfer grilles or jumper ducts.

—**207.2.17.4** Perform duct leakage testing in accordance with the duct testing —protocols contained in *Chapter 8 – Performance Testing and Work Scope* and —recommend sealing as needed based on test results.

—**207.2.17.5** Determine need for duct insulation in unconditioned spaces and specify —thickness of retrofit insulation if needed.

—**207.2.18 Ventilation**

—**207.2.18.1** Identify fresh air ventilation from supply, exhaust and balanced flow —systems.

—**207.2.18.2** Identify heat-recovery ventilation (HRV) and energy-recovery —ventilation (ERV) systems.

—**207.2.18.3** Determine HRV or ERV efficiency, fan power and duty cycle —characteristics.

—**207.3 - Home Energy Rating System Rater (HERS Rater)**

A Certified Home Energy Rater shall have proficiency at the knowledge and abilities of a HESP and a Rating Field Inspector in addition to the following.

—**207.3.1 General**

—**207.3.1.1** Understand and be familiar with local climate conditions, housing stock, —and climate- specific practices.

—**207.3.1.2** Understand local utility pricing structures (flat vs. tiered rates, net- —metering regulations) and sources for reliable utility information.

—**207.3.1.3** Prepare a detailed work scope.

—**207.3.1.4** Develop field inspection forms.

207.3.1.5 Identify major U.S. climate zones and energy consumption impacts of local climate zone.

207.3.2 RESNET Rating System

207.3.2.1 Communicate the business aspects of being a RESNET HERS Rater.

207.3.2.2 Maintain current knowledge of the HERS Rating method using the Reference Home as defined in *Section 304.3.1 – Rating Procedures* of the National Home Energy Rating Technical Guidelines.

207.3.2.3 Conduct both projected and confirmed building simulation and performance analysis to provide HERS Ratings in accordance with the requirements in *Chapter 3 – National Energy Rating Technical Standards* and *Chapter 8 – Performance Testing and Work Scope*.

207.3.2.4 Use RESNET approved energy analysis software capable of producing a HERS Index, data entry procedures, reporting, and analysis of results.

207.3.2.5 Calculate HERS Score computation using the Normalized Modified Loads Rating Method.

207.3.2.6 Communicate the benefits of the Home Energy Rating System to homeowners, builders, finance and real estate agents and cultivate partnerships between those individuals.

207.3.2.7 Assist and educate customers and builders with:

207.3.2.7.1 Home Energy Surveys and Home Energy Ratings.

207.3.2.7.2 Cost effectiveness of energy efficient building design.

207.3.2.7.3 Quality assurance.

207.3.2.7.4 Marketing of HERS Rated Homes.

207.3.2.7.5 Qualifications for programs such as ENERGY STAR®.

207.3.2.7.6 Real estate financing, economic terminology, and energy code compliance.

207.3.2.7.7 Financing advantages of Energy Efficient Mortgages (EEM) and Energy Improvement Mortgages (EIM).

207.3.2.7.8 Adding appraisal value through energy improvements.

~~—207.3.2.8~~ Provide excellent customer service in an ethical and fully disclosed manner.

~~—207.3.2.9~~ Produce reports which meet minimum reporting requirements and improvement analysis.

~~—207.3.2.10~~ Maintain standard operating procedures and office administration.

~~207.3.2.11~~ Maintain knowledge of current technical guidelines.

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RECIPROCITY

Nationally accredited Home Energy Rating Providers shall accept certified training provided by an accredited Training Provider as meeting the core competencies for a Home Energy Rater. Accredited Home Energy Rating Providers may add additional training requirements needed to address their specific program, climate, software or administrative requirements.

Appendix B

GLOSSARY OF TERMS

Accredited Rater Training Provider or Accredited Training Provider or Training Provider - A Rater Training Provider accredited by RESNET in accordance with Chapters 2 and 9 of RESNET Standards to ~~instruct~~ ~~train~~ individuals to become Raters certified by Accredited Rating Quality Assurance Providers. Only RESNET Accredited Rater Training Providers ~~can~~ may offer rater instruct ~~instruct~~ training and set up the national rater tests.

Approved Accredited Rating Quality Assurance Provider – Shall mean a RESNET ~~_~~ accredited RESNET Rating Quality Assurance Provider who is listed in good standing in the National RESNET Registry.

Comprehensive Home Energy Audit

~~A level of the RESNET Home Energy Audit process defined by this standard to include the evaluation, diagnosis and proposed treatment of an existing home. The Comprehensive Home Energy Audit may be based on a Home Performance Assessment (“Comprehensive Home Performance Energy Audit”) or Home Energy Rating (“Comprehensive HERS Audit”), in accordance with the criteria established by this Standard. A homeowner may elect to go through this process with or without a prior Home Energy Survey or Diagnostic Home Energy Survey.~~

Examination - Test developed by RESNET and administered by an ~~aeereditied~~ Accredited Rater Training Provider ~~from questions developed by Training and Education Committee.~~

Home Energy Rater, or HERS Rater or Rater – An individual meeting the minimum training requirements for Raters set forth in Chapter 2 of these Standards, documented by an Accredited RESNET Training Provider, and certified by an Accredited Rating Quality Assurance Provider to inspect a home to evaluate the minimum rated features and complete Home Energy Ratings (see also Rating Field Inspector ~~and Senior Certified Rater~~).

Home Energy Rater Candidate, or Rater Candidate An individual who has received instruction from a RESNET Accredited Training Provider and has passed the required RESNET tests. ~~completed two (2) supervised ratings with a RESNET Accredited Training Provider, passed the National Core Rater Test and is in the process of completing three (3) additional probationary ratings necessary for certification by an Accredited Rating Quality Assurance Provider as a Home Energy Rater.~~

Home Energy Rating Quality Assurance Provider, or HERS QA Provider, or Rating Provider - See Accredited Rating Quality Assurance Provider.

Home Energy Survey, Diagnostic

~~A level of the RESNET Home Energy Survey in accordance with this standard, consisting of an In-Home Home Energy Survey and additional diagnostic testing.~~

~~National **HERSCore Rater Test** - Computer-based examination developed by the Residential Energy Services Network's (RESNET) Training and Education Committee and administered by RESNET.~~

~~**Rater Trainer/Instructor, Certified** - An individual certified by RESNET and designated by an Accredited ~~Rater~~ Training Provider to provide instruction and assistance to candidate~~trainees~~. ~~A class instructor who has demonstrated, by means of passing the RESNET National Rater Trainer Competency Test, mastery of the building science and rating system and competency necessary to effectively teach Rater training courses.~~ Only RESNET certified~~Certified~~ Rater Trainers~~Instructors~~ can~~may~~ provide rater ~~training~~ instruction under the auspices of a RESNET ~~accredited~~ Accredited Rater Training Provider.~~

~~**RESNET Candidate Field Assessor** – An individual certified by RESNET and designated by an Accredited RESNET Rating Quality Assurance Provider to conduct probationary and field assessments for candidates.~~

~~**RESNET Combustion Appliance Simulation Test or Combustion Appliance Test** – Simulation based practical test adopted by RESNET used for the assessment of RFI and HERS Rater candidates.~~

~~**RESNET Rater Simulation Practical Test** – Simulation based practical test adopted by RESNET used for the assessment of HERS Rater candidates.~~

~~**RESNET JobWerks RFI Assessment** – Software adopted by RESNET used for assessment of RESNET RFI candidates.~~

~~**RESNET JobWerks RFI Mentoring Tool**- ~~Tablet based~~ software adopted by RESNET, ~~residing in the cloud,~~ used mentoring for coaching, tracking and assessment of RESNET RFI Candidates.~~

~~**RESNET JobWerks HERS Rater Assessment** –Software adopted by RESNET used for assessment of RESNET HERS Raters.~~