



Setting the Standards for
Home Energy Efficiency

RESNET Quality Assurance Process

January 1, 2015

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Blue Text = Italicized text is from RESNET Standards

Red Text = Attachment documents (with Appendix noted)

Green Text = Layman's terms interpretation, explanation (with "Summary" noted)

Orange Text = "Best Practices"

1. General Considerations for QA Process

- a. See **Appendix A - Chapter 9 of the RESNET Mortgage Industry National HERS Standards.**
- b. **904.1** *No step in the QA process may be performed by the same individual that performed any part of the testing, inspection or rating of the home being subject to the QA review. If an individual performed any part of the inspection or rating process on a home, that individual cannot be the QA Designee or Delegate performing any part of the QA process specific to that home. Any ratings performed by a QA Designee that are submitted as part of a Provider's QA Submission to RESNET shall be reviewed for quality assurance by a separate individual who meets the QA Designee requirements established by RESNET.*

Summary: QA Designees cannot perform quality assurance on their own ratings. Quality assurance on their ratings must be done by another QA Designee.

c. **Definition from RESNET Standards Appendix B:**

- i. Quality Assurance Data File (QA Data File) – The collection of data that comprises the complete quality assurance information for a specific Home Energy Rating, including take-off forms, field data collection forms, energy simulation files, building plans, RESNET Standard Disclosure Forms, rating certificates, rating reports, QA records (including findings and the resolution of any issues), photo documentation, as well as any documentation required by Third-Party Energy Efficiency Programs (EEP's) such as checklists, copies of labels or third-party certificates, and the names of each certified individual (i.e. Raters and/or Rating Field Inspectors) who worked on the rating (field inspections, modeling, etc.).
- ii. Quality Assurance Designee (QA Designee) – An officer, employee, or contractor responsible for quality assurance within a Provider organization, who has met the requirements of section 905.3 of this Chapter and has signed an agreement with the Provider to be the Provider's QA Designee.
- iii. Quality Assurance Designee Delegate (QA Delegate) – An individual certified as a Home Energy Rater, appointed by a Quality Assurance Designee to complete a portion of the Quality Assurance process, who has met the requirements of section 905.3 of this Chapter.
- iv. Quality Assurance Designee, Primary (Primary QA Designee) – The one QA Designee for a Provider who shall have ultimate responsibility, on behalf of the Provider, for fulfilling the Provider's QA requirements/responsibilities and who shall be the single point of contact to RESNET regarding all Quality Assurance matters.

2. **QA Process Overseen and Executed by RESNET Staff / Contractor**

a. **Annual QA Submittal to RESNET**

- i. **903.1** RESNET shall review 100% of the annual reports submitted by Rating Quality Assurance Providers (QA Providers).
- ii. A request for QA annual reports (submittal packages) is sent to Providers a minimum of 30 days prior to the date that the reports are due. The submittal date has been established by RESNET as March 31st.
- iii. See **Appendix B - RESNET 2013 Rating Quality Assurance Submittal** document for details of what RESNET requires for annual QA submittal package.

1. Part 1 – Report of quality assurance work completed for the previous calendar year. Report includes QA for each certified Rater and Rating Field Inspector, including documentation of file and field QA reviews.
2. Part 2 – Completion of **Appendix C - RESNET Quality Assurance Checklist**. This Checklist is a verification that all Provider and Rater responsibilities listed in the RESNET Standards have been met.
3. See **Appendix D - RESNET QA Roundtable Checklist Item Review** for clarification of requirements for each Checklist Item and how to implement.

b. RESNET Detailed QA Review of Rating QA Providers

- i. **903.1 (continued)** *In addition, RESNET shall select a minimum of 25% of accredited QA Providers and conduct a more detailed review of their Quality Assurance records. This QA review may be a review of electronic files submitted to RESNET with the annual report, enhanced monitoring of QA Provider files done remotely, an onsite field review, or any combination of the aforementioned. The RESNET Quality Assurance Manager shall determine which QA Providers that will be reviewed and who will provide the quality assurance review.*

Summary: Each year, RESNET will perform a quality assurance review on 25% of QA Providers. The review may be onsite or electronically, e.g. using GoToMeeting.

- ii. RESNET's Goal for the Detailed QA Reviews
 1. Ensure compliance with RESNET Standards
 2. Opportunity for mentoring
 3. Answer questions for QA Provider
- iii. Providers selected for a more detailed QA review are typically:
 1. Brand new Providers
 2. Providers with significant findings in QA Submittal package
 3. Providers with compliance complaints
- iv. Reviews are not onsite unless RESNET is investigating an issue that requires onsite review.
- v. Reviews are conducted by the RESNET QA Manager and may include an outside contractor to provide input on technical questions. A typical Review is approximately 2 hours and conducted via GoToMeeting webinar. Items the Provider may be asked to present include:
 1. Rater Registry
 2. Policies & Procedures

3. Method of tracking Professional Development hours (CEU's)
4. Open QA'd building files
5. Documentation of meeting 10% and 1% QA requirements
6. Signed Rater agreements
7. Signed QAD agreements

3. QA Designee FILE REVIEW of Raters and Ratings for Rating QA Providers

a. General Information

- i. *904.4.1.1 For each Rater, the Provider's QA Designee shall be responsible for an annual QA file review of the greater of one (1) home or ten percent (10%) of the Rater's annual total of homes for which Confirmed or Sampled ratings were provided. When determining the number of homes to review for a Rater, round up to the next whole number when the percentage calculation yields a decimal point, e.g. 101 homes x 10% = 10.1 means that 11 homes shall be reviewed.*
- ii. *904.4.1.2 A QA file review shall be conducted on an ongoing basis as appropriate for the volume of ratings being completed, and at a minimum quarterly. The results of the review are submitted annually.*
- iii. *904.4.1.3.6 Confirm that paper and/or electronic files are being maintained and archived by Raters for each rating, including the Energy Simulation File and all supporting documentation required to validate the inputs into the rating software file (e.g., architectural drawings, threshold specifications, field data). These files shall be maintained a minimum of three (3) years.*

Summary: Ten percent of each Rater's rated homes must receive a quality assurance review of the rated home's electronic documentation.

- iv. See ANSI 301, Section 5.1.4 for a definition of Confirmed, Sampled and Projected Ratings (see Appendix E).
 1. Confirmed Rating – A rating that has all rated features of the home verified in the field and entered into the rating software.
 2. Sample Rating – A rated home that is part of a group of homes where rated features are field verified in one or more homes in the group. The inputs to the rating software reflect a worst case analysis and not the actual conditions found in the field.

3. **Projected Rating** – A rating on a to-be-built or to-be-improved home that is based on drawings and specifications and not actual or final conditions found in the field.

- v. Submittal of homes to the RESNET Ratings Registry.
 - 1. Submitting energy simulation files for homes to be improved.
 - a. To-be-improved homes typically have three separate energy simulation files. One representing the existing home as is, one representing the home with projected improvements, and one representing the final home after improvements have been made.
 - b. The energy simulation file for the as-is existing home is submitted to the RESNET Registry to receive a Rating ID.
 - c. The energy simulation file for the to-be-improved home is not submitted to the RESNET Registry because it is not a confirmed rating.
 - d. The energy simulation file from the as-is existing home (which includes a Rating ID) is updated to reflect actual or final conditions found in the field after improvements have been made. This updated file is submitted to the RESNET Registry to update the rating file for the home in the Registry.

Note: The simplest way to avoid duplicate files in the RESNET Rating Registry is to upload the simulation file which already contains the Registry generated Rating ID.

- 2. Submitting projected ratings for new homes.

Energy simulation files for new home projected ratings represent a home modeled in the worst case orientation, i.e. highest HERS Score. These homes are uploaded to the RESNET Registry because they represent the final status of the home based on threshold specifications established by an EEP or other program requirements.

b. FILE QA of Confirmed / Projected (worst case orientation) Ratings

- i. Only homes that are submitted to the RESNET Registry are eligible for QA.
- ii. **Best Practice:** QA is only required on an existing as-is home if improvements are NOT made in the same calendar year, or within 60 calendar days, of the date the existing as-is rating is completed,

whichever is the longer period of time. If an existing as-is home is eligible for QA, the QA is documented in the calendar year that the ratings was completed. The final improved home is always eligible for QA.

- iii. Best Practice: The 60 day calendar day period noted in ii allows time for homes rated at the end of the calendar year, i.e. November and December, to be QA'd in the month of March if the improvement does not happen by the end of February, i.e. 60 days into the year. All QA must be completed prior to the submission of QA results to RESNET by March 31st.

- iv. Requirements

- 1. *904.4.1.3.3 For each Confirmed Rating*, [or projected rating for a new home in worst case orientation], *confirm that the values entered into the Rating Software for all Minimum Rated Features are supported by actual on-site field-verified test data.*

- v. Process

- 1. Randomly select homes at a minimum ratio of 1 in every 10 for each Rater.
 - 2. Pull the energy simulation file for the selected home and all supporting documentation for the Rating.
 - 3. For confirmed ratings, compare the inputs in the energy simulation file with actual data collected in the field and, if available, data from architectural drawings and specifications to confirm there are no discrepancies. Field data and inputs to the energy simulation file should match.
 - 4. For projected rating for a new home in worst case orientation, compare the inputs in the energy simulation file with the data from architectural drawings and specifications and actual data collected in the field to confirm there are no discrepancies and that the energy simulation files represent worst-case conditions. Field data should be equal to or better than the inputs (aka "targets").
 - 5. Use the **RESNET QA File-Field Review Checklist (see Appendix F)** to document the review and any findings.
 - 6. Any discrepancies should be clearly identified and communicated to the Rater. Section 904.4.3 "Non-compliance of a reviewed rating shall trigger corrective action" in the RESNET Standards will be followed (see below).

c. FILE QA of Sampled Ratings

Summary:

Quality assurance File review for sampling consists of the following three steps:

1. Confirm that sampling process is being followed.
 2. Confirm that the testing and inspection results from the field are equal to or better than the inputs to the energy simulation files.
 3. Confirm that the data from drawings and specifications match the inputs to the energy simulation files and that the energy simulation files represent worst-case conditions.
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- ii. Confirm that the Rater's QA Provider is accredited by RESNET as a Sampling Provider.
 - iii. **904.4.1.3.4 QA file review for Sampled Ratings. For Sampled Ratings, annually review sample sets, the sampling process, and the worst-case projected rating energy simulation files for homes rated through sampling.**
 - iv. **Step 1:** Analysis and confirmation that the sampling process is being followed
 1. Requirements
 - a. **904.4.1.3.4.1** The QA file review for sampled ratings shall include an analysis and confirmation that the sampling process, as defined in Chapter 6, is being properly followed, including sample set creation and the application of testing and failure protocols.
 - b. **904.4.1.3.4.1.1** QA file review of the sampling process shall be completed on the greater of one (1) sample set or ten percent (10%) of the Rater's annual total of sample sets. When determining the number of sample sets to review for a Rater, round up to the next whole number when the percentage calculation yields a decimal point, e.g. 101 sample sets x 10% = 10.1 means that 11 sample sets shall be reviewed.
 2. Process
 - a. Request from each Rater, a copy of their sample set report which shows how sample sets were created for each calendar quarter. The report should include the following minimum information:
 - i. Builder name
 - ii. Community/subdivision name
 - iii. Start date (or other date used for creating sample sets)

- iv. Tested home(s) identified
- v. Sampled/non-tested homes identified
- vi. Passing and failing inspections noted
- b. Randomly select sample sets at a minimum ratio of 1 in every 10 for each Rater.
- c. Evaluate each Rater's sampling process to confirm, at a minimum, the following requirements from **Chapter 6 in the RESNET Standards (see Appendix G)** were followed and the sampling process is being properly tracked:
 - i. **603.5.2** *For each stage of construction, each sample set will be composed of homes eligible for the applicable sampling controls within a 30 calendar day period. For example: a sample set that is defined for a pre-drywall inspection must include homes that are eligible for that pre-drywall inspection within a given 30-day period. If fewer than seven (7) homes are available for that phase of inspection, the sample set must be cut off at the number of homes that are available within that 30-day period. This sample set need not be carried through to final inspection; in fact, a whole new sample set may be defined for the final inspection phase based on the homes available for that phase within a new, 30-day period applied to that phase of tests and inspections.*

Summary: Confirm that the start date (or other date used for creating sample sets) for each home in a sample set is within a 30- day window (NOT 30 days forward and 30 days backward, i.e. a 60 day window).

- ii. **603.5.3** *Each home subject to sampling is required to be part of an identified set of sampling controls for each test or inspection that is sampled.*

Summary: Confirm that each home is included in a sample set so it is identified with each individual test or inspection required for the rating.

- iii. **603.5.4** *Each participating subdivision within a metropolitan area is subject to sampling controls on at least one home in any 90 calendar day period.*

Summary: Confirm a test or inspection was completed in each subdivision, or community, at least once every 90 days.

- iv. **603.7.3** *To qualify for sampling in a metropolitan area, a builder shall first complete, without any incidence of failure, a complete set of sampling controls on at least seven (7) consecutive homes in that metropolitan area. For this initial phase of testing and inspections, the complete set of sampling controls shall be performed on each of the seven (7) homes.*

Summary: For each item in a home that is tested or inspected, the item must pass in seven consecutive homes for the builder to begin sampling of that item in that metropolitan area.

- v. **603.7.3.1** *For each newly started subdivision, sampling may begin for each sampling control only after three (3) of a particular sampling control passes consecutively without any incidence of failure.*

Summary: For each item in a home that is tested or inspected, the item must pass in three consecutive homes for the builder to begin sampling of that item in that subdivision.

- vi. **603.7.6** *When an “initial failure” occurs, the failed item(s) shall be tested or inspected in two (2) additional homes selected from the same sample set. Testing and/or inspections for any item(s) that may become inaccessible during the construction process, (e.g. wall insulation) must be timed so additional testing*

and/or inspections can occur on other homes in the sample set before they become inaccessible for inspection or testing.

- vii. **603.7.7** *When an “additional failure” occurs, in one or more of the two (2) additional homes, the failed item(s) shall be tested or inspected in the remaining four (4) homes selected for the same sample set.*
- viii. If there were multiple additional failures, did the builder follow the requirements of 603.8 in Chapter 6 of the RESNET Standards?

v. **Step 2:** Analysis of sample control “Targets” against field data

1. Requirements

- a. **904.4.1.3.4.1.2** *For each sample set QA file review, the quality assurance data file(s) shall be reviewed to confirm that data collected in the field (i.e. sample controls) are equal to or better than the minimum rated feature threshold specification inputs for the worst-case energy simulation file for the home(s) that received sample controls for the sample set.*
- b. **904.4.1.3.4.1.3** *If a discrepancy in minimum rated features is identified that requires more stringent threshold specifications for a floor plan, then the worst case projected rating energy simulation file for that plan and home, or for the entire set of homes (as appropriate), subject to sampling shall be reviewed in accordance with 904.4.1.3.4.2.*

2. Process

- a. Randomly select sample sets at a minimum ratio of 1 in every 10 for each Rater.
- b. Pull the Energy Simulation File for the tested home(s) in the Sample Set and any data collected in the field.
- c. For the tested home(s), compare the inputs in the Energy Simulation Files with the actual data collected in the field. Field data should be equal to or better than the Energy Simulation File inputs (aka “targets”).
- d. Use the **RESNET QA File-Field Review Checklist (see Appendix F)** to document the review and any findings.
- e. Any discrepancies should be clearly identified and communicated to the Rater. Section 904.4.3 “Non-compliance of a reviewed rating shall trigger

corrective action” in the RESNET Standards will be followed (see below).

- vi. **Step 3:** QA File Review of worst-case projected rating energy simulation files for sampled ratings.

1. Requirements

- a. *904.4.1.3.4.2 The QA file review for sampled ratings shall include an initial review of the worst-case energy simulation file for each unique floor plan in order to confirm that minimum rated features and worst-case specifications have been entered into the rating software accurately. An energy simulation file for a particular floor plan is not subject to subsequent review after the initial QA review provided the minimum rated features and threshold specifications do not change as determined by this Section.*

2. Process

- a. Pull the Energy Simulation File for each floor plan included by a builder in sampling and all supporting documentation used to create the Energy Simulation Files.
- b. Compare the inputs in the Energy Simulation Files with the data from architectural drawings and specifications to confirm there are no discrepancies and that the energy simulation files represent worst-case conditions.
- c. Use the **RESNET QA File-Field Review Checklist (see Appendix F)** to document the review and any findings.
- d. Any discrepancies should be clearly identified and communicated to the Rater. Section 904.4.3 “Non-compliance of a reviewed rating shall trigger corrective action” in the RESNET Standards will be followed (see below).

4. **QA Designee FIELD REVIEW of Raters and Ratings for Rating QA Providers**

a. **General Information**

- i. **Best Practice:** The individuals who are doing the actual work for the rating must be clearly identified in Rating Data File documentation, e.g. energy simulation files, field testing and inspection forms, etc.
- ii. Confirm that only Raters and Rating Field Inspectors are doing work on Ratings completed in accordance with the RESNET

Standards. Also confirm that each Rater and Rating Field Inspector has met minimum required RESNET certification requirements.

- iii. **904.4.2.1** *For each Rater, the Provider's QA Designee shall be responsible for an annual onsite QA field review of the greater of one (1) home or one percent (1%) of the Rater's annual total of homes for which confirmed or sampled ratings and diagnostic testing services were provided. When determining the number of QA field reviews to complete for a Rater, round up to the next whole number when the percentage calculation yields a decimal point, e.g. 101 homes x 1% = 1.01 means that 2 QA field reviews shall be completed.*
- iv. **904.4.2.2** *QA field reviews for Rating Field Inspectors (RFIs)*
 - 1. **904.4.2.2.1** *For Raters utilizing Rating Field Inspectors (RFIs), the QA Designee shall ensure that a QA field review is completed on the greater of one (1) home or one percent (1%) of each RFI's annual total of homes for which confirmed or sampled ratings and diagnostic testing services were provided by the RFI. The RFI QA field reviews may fulfill all or a portion of the Rater's annual QA field review requirement.*
 - 2. **904.4.2.2.2** *When determining the number of QA field reviews to complete for an RFI, round up to the next whole number when the percentage calculation yields a decimal point, e.g. 101 homes x 1% = 1.01 means that 2 QA field reviews shall be completed.*
 - 3. **Best Practice:** *When picking homes for the 1% Field QA, focus on getting into homes that were completed by each RFI in the proper proportion based on the number of full final inspections completed in the previous quarter. Do not count re-inspections or part of a final inspection when calculating the number of homes. Because this process only focuses on final inspections, it is likely that the total number of homes required for Field QA may not align with the actual number of QA Field homes that are needed. For example, if a Rater certified/rated 1,982 single family homes in 2013, 1% or 20 homes would require Field QA. However, if you look at the number of final inspections completed by each RFI, you may find that a lower total number of home are required for Field QA for the RFI's. When this happens, first meet the minimum needed for each inspector, then pick homes for the inspectors that have the largest totals.*
- v. **904.4.2.4** *QA field reviews shall be conducted on an ongoing basis as appropriate for the volume of ratings being completed, and at a minimum of annually.*

- vi. **904.4.2.5** *Each home selected for a QA field review for each Rater shall be randomly selected from as many different builders and communities as possible. Special effort should be taken to make certain that the selected homes are as representative as possible of the homes being rated, i.e. new and existing homes, geographic location, builder, trade contractor, variety of floor plans, etc., which, in some instances, may require more than the minimum (1) home or one percent (1%). For multifamily projects, when selected, QA field review shall include at least one top floor end unit and one bottom floor end unit.*
- vii. **904.4.2.8** *Confirm that HERS Index scores for each home reviewed in accordance with 904.4.2.5 be no more than three percent (3%) (+/-) variation in the HERS Index from the HERS Index result as determined by the QA Designee. When calculating the HERS Index point variance allowed for a given Index, round down to the nearest whole Index point, with the allowable variance never less than two (2) HERS Index points.*

b. FIELD QA of Confirmed / Projected (worst case orientation) Ratings

i. Requirements

904.4.2.6 *As part of the QA field review of confirmed ratings, [or projected ratings for new homes in worst case orientation], the QA Designee shall ensure that the minimum rated features of a rating are independently confirmed (i.e. confirmation of geometric characteristics, inspection of minimum rated features, and completion of any necessary performance testing) to determine whether the rating and/or diagnostic testing were accurately completed by the Rater, and determine whether information was completely collected and reported as required in 303.1 of Chapter 3 of these Standards.*

ii. Process

1. Randomly select homes at a minimum ratio of 1 in every 100 for each Rater (RFI).
2. Do a site visit to each home requiring Field QA and collect all data necessary to recreate the rating, as if performing a confirmed rating on an existing home. Collect data using a preferred written or electronic field data collection form that can be included in the QA File for each home.
3. Complete the "Field QA of Equipment Condition and Calibration" section of the **RESNET QA File-Field Review Checklist (see Appendix F)**.
4. Pull the energy simulation file for the selected home and all supporting documentation for the Rating.

5. For confirmed ratings, compare the inputs in the energy simulation file with 1) actual data collected in the field by the Rater/RFI, 2) if available, data from architectural drawings and specifications, and 3) data collected in the field as part of the Field QA process. Confirm there are no discrepancies between the data. Field data collected by the Rater/RFI and as part of the Field QA process should match.
 6. For projected ratings for a new home in worst case orientation, compare the inputs in the energy simulation file with 1) actual data collected in the field by the Rater/RFI, 2) data from architectural drawings and specifications, and 3) data collected in the field as part of the Field QA process. Confirm there are no discrepancies between the data. Field data collected by the Rater/RFI and as part of the Field QA process should be equal to or better than the inputs (aka "targets").
 7. Use the **RESNET QA File-Field Review Checklist (see Appendix F)** to document the review and any findings.
 8. Any discrepancies should be clearly identified and communicated to the Rater. Section 904.4.3 "Non-compliance of a reviewed rating shall trigger corrective action" in the RESNET Standards will be followed (see below).
- iii. Complete the **RESNET ENERGY STAR version 3 QA Checklist (see Appendix H)**. See **RESNET Procedures on ENERGY STAR Version 3 Quality Assurance of Raters (see Appendix I)** for procedures and responsibilities.

c. FIELD QA of Sampled Ratings

i. Requirements

904.4.2.7 QA field review of Sampled Ratings. *For the purposes of calculating the one (1) home or one percent (1%) QA field review requirement for Rater and RFI sampled ratings, all the homes rated by a Rater, or for which an RFI assisted, using sampling shall be considered and not just the number of homes tested and inspected. If at least two (2) homes are required for QA field review, a maximum of one (1) of the homes shall be a non-tested, sampled home. To ensure that QA is being completed on Raters and Rating Field Inspectors rather than builders, the balance of homes included in the field QA shall have received field testing and/or inspections.*

ii. Process

1. Randomly select homes at a minimum ratio of 1 in every 100 for each Rater (RFI) that have been tested and/or inspected. If more than one (1) home is required for Field QA, a maximum of one of the Field QA homes must be a non-tested/sampled home.
2. Do a site visit to each home requiring Field QA and collect all data necessary to recreate the rating, as if performing a confirmed rating on an existing home. Collect data using a preferred written or electronic field data collection form that can be included in the QA File for each home.
3. Complete the “Field QA of Equipment Condition and Calibration” section of the **RESNET QA File-Field Review Checklist (Appendix F)**.
4. Pull the energy simulation file for the selected home and all supporting documentation for the Rating.
5. Compare the inputs in the energy simulation file with 1) actual data collected in the field by the Rater/RFI, 2) data from architectural drawings and specifications, and 3) data collected in the field as part of the Field QA process. Confirm there are no discrepancies between the data. Field data collected by the Rater/RFI and as part of the Field QA process should be equal to or better than the inputs (aka “targets”).
6. Use the **RESNET QA File-Field Review Checklist (Appendix F)** to document the review and any findings.
7. Any discrepancies should be clearly identified and communicated to the Rater. Section 904.4.3 “Non-compliance of a reviewed rating shall trigger corrective action” in the RESNET Standards will be followed (see below).

- iii. Complete the **RESNET ENERGY STAR version 3 QA Checklist (see Appendix H)**. See **RESNET Procedures on ENERGY STAR Version 3 Quality Assurance of Raters (see Appendix I)** for procedures and responsibilities.

5. Non-compliance of Reviewed Ratings

- a. **904.4.3 Non-compliance of a reviewed rating shall trigger corrective action.**
 - i. **904.4.3.1 The rating shall be corrected in order to come into compliance with RESNET technical Standards under the supervision of the QA Designee.**
 - ii. **904.4.3.2 The QA Designee shall develop and implement a corrective action plan for the Rater of the rating that addresses any**

underlying problems that led to the non-compliant rating. It is the responsibility of the QA Designee to determine the appropriate corrective action plans, i.e. if the plan is as simple as the Rater correcting the discrepancy(s) and reporting back to the QA Designee that the corrections have been made or if the plan is more in-depth, requiring a detailed root cause analysis for the discrepancy(s) and detailed steps for how to correct the situation. It will also be necessary to resubmit the corrected energy simulation file to the RESNET Registry and, if necessary, providing the Rating Client with corrected Rating Documentation.

- iii. *904.4.3.3 The Provider shall initiate appropriate disciplinary action on the Rater in accordance with the Provider's written Rater disciplinary procedures.* It is the responsibility of the QA Designee to determine the necessity of disciplinary action, dependent on the severity of the discrepancy found in File Reviews. Disciplinary action may not be necessary in all instances.
- iv. *904.4.3.4 Multiple instances of non-compliance with 904.4.3 shall, at a minimum, trigger an increased rate of file reviews or onsite inspections of homes and additional appropriate disciplinary action in accordance with the Provider's written Rater disciplinary procedures.*

Mortgage Industry National Home Energy Rating Systems Standards – Advisory Version

*This document is a working copy of the 2012 Standards that
incorporate all amendments adopted as of January 1, 2014*

*The official copy of the Standards are posted at
http://www.resnet.us/standards/RESNET_Mortgage_Industry_National_HERS_Standards.pdf*

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Chapter Nine

RESNET Standards

900 RESNET NATIONAL STANDARD FOR QUALITY ASSURANCE

901 GENERAL PROVISIONS

901.1 Purpose

RESNET has the responsibility of accrediting Providers. This chapter outlines the quality assurance responsibilities of RESNET and Providers, the role and responsibility of the Quality Assurance Committee, the role and responsibility of the Accreditation Committee, the RESNET Accreditation Process for all Providers, the RESNET policies and procedures for Probation, Suspension and Revocation of Provider Accreditation, and the Appeals process for each of these disciplinary actions.

902 DEFINITIONS AND ACRONYMS

See Appendix B.

903 RESNET QUALITY ASSURANCE REVIEW OF ACCREDITED RATING QUALITY ASSURANCE PROVIDERS

903.1 RESNET shall review 100% of the annual reports submitted by Rating Quality Assurance Providers (QA Providers). In addition, RESNET shall select a minimum of 25% of accredited QA Providers and conduct a more detailed review of their Quality Assurance records. This QA review may be a review of electronic files submitted to RESNET with the annual report, enhanced monitoring of QA Provider files done remotely, an onsite field review, or any combination of aforementioned. The RESNET Quality Assurance Manager shall determine which QA Providers that will be reviewed and who will provide the quality assurance review.

903.2 Records reviewed may include, but are not limited to a representative sample of the following:

903.2.1 Rating electronic files;

903.2.2 Rating quality assurance records including, but not limited to the following:

903.2.2.1 Photo and/or video documentation from onsite field reviews;

903.2.2.2 The QA Provider's field review reports of findings submitted to Raters;

903.2.2.3 The QA Provider’s post-field review of rating results that show a comparison with original ratings selected for onsite QA review;

903.2.2.4 If remedial action is required, the QA Provider’s plan of action to correct for non-compliance with the RESNET Standards and results of any action taken

903.2.3 Complaint files

903.2.4 Rater agreements

903.2.5 Rater registry

903.2.6 Disclosure files

903.2.7 Rating databases;

903.2.8 Interviews with a QA Provider’s QA Designee, Delegates, Raters or Rating Field Inspectors;

903.2.9 “Shadowing” a QA Provider’s QA Designee, Raters, or Rating Field Inspectors in the field.

903.3 An accredited QA Provider has the right to challenge the findings of a RESNET Quality Assurance reviewer for cause by submitting, in writing to the RESNET Executive Director, the details of their challenge

903.4 Significant inconsistencies or errors in electronic records reviewed may result in an onsite review by RESNET.

904 QUALITY ASSURANCE REQUIREMENTS FOR QA PROVIDERS

904.1 No step in the QA process may be performed by the same individual that performed any part of the testing, inspection or rating of the home being subject to the QA review. If an individual performed any part of the inspection or rating process on a home, that individual cannot be the QA Designee or Delegate performing any part of the QA process specific to that home. Any ratings performed by a QA Designee that are submitted as part of a Provider’s QA Submission to RESNET shall be reviewed for quality assurance by a separate individual who meets the QA Designee requirements established by RESNET.

904.2 QA Providers are responsible for completing an annual submission of QA results to RESNET. RESNET shall designate the date submissions are due, the content of each submission, and the time frame for which data shall be provided, e.g. January 1st through December 31st. QA Providers will have at least thirty (30) days from notification until the submission is due.

904.3 Quality Assurance of QA Providers

904.3.1 RESNET shall develop a “RESNET Quality Assurance Checklist” that is to be used by QA Designees for the purpose of verifying a Provider’s compliance with the individual requirements for Providers set forth in the RESNET Standards. The QA Designee shall review the QA Provider’s compliance with the items on the checklist annually.

904.3.1.1 For the first-time QA review completed by a QA Designee new to a Provider, including in the event that a Provider changes QA Designees, every item on the checklist should be checked for compliance, accuracy and completeness.

904.4 Quality Assurance of Raters and Ratings

904.4.1 Quality Assurance file review (QA file reviews)

904.4.1.1 For each Rater, the Provider’s QA Designee shall be responsible for an annual QA file review of the greater of one (1) home or ten percent (10%) of the Rater’s annual total of homes for which Confirmed or Sampled Ratings were provided. When determining the number of homes to review for a Rater, round up to the next whole number when the percentage calculation yields a decimal point, e.g. 101 homes x 10% = 10.1 means that 11 homes shall be reviewed.

904.4.1.2 A QA file review shall be conducted on an ongoing basis as appropriate for the volume of ratings being completed, and at a minimum quarterly.

904.4.1.3 The QA file review completed by a QA Designee shall consist of, at a minimum, the following:

904.4.1.3.1 Homes shall be selected using a nonbiased selection process from the entire pool of homes available at the time of the review for each Rater. It may be necessary to first select homes that represent any particular area of concern in either the rating or construction process. Once it is ensured that homes from these areas of interest will be included in the QA process, a nonbiased selection process can then be applied such as random selection. Special effort should be taken to make certain that the selected homes are as representative as possible of the homes being rated, i.e. new and existing homes, geographic location, builder, trade contractor, variety of floor plans, etc., which, in some instances, may require more than the minimum (1) home or ten percent (10%).

904.4.1.3.2 While Section 102.1.4.11 and 303.3.7 require that Raters submit energy simulation files for every rated home to their Providers, the QA file review does not require that Raters submit quality assurance data files, as defined in Appendix B, to their Provider and/or QA Designee for every home that is rated. Only quality assurance data files for the homes selected for QA shall be required to be submitted to the QA Designee.

904.4.1.3.3 For of each Confirmed Rating, confirm that the values entered into the Rating Software for all Minimum Rated Features are supported by actual on-site field-verified test data;

904.4.1.3.4 QA file review for Sampled Ratings. For Sampled Ratings, annually review sample sets, the sampling process, and the worst-case projected rating energy simulation files for homes rated through sampling.

904.4.1.3.4.1 The QA file review for sampled ratings shall include an analysis and confirmation that the sampling process, as defined in Chapter 6, is being properly followed, including sample set creation and the application of testing and failure protocols.

904.4.1.3.4.1.1 QA file review of the sampling process shall be completed on the greater of one (1) sample set or ten percent (10%) of the Rater's annual total of sample sets. When determining the number of sample sets to review for a Rater, round up to the next whole number when the percentage calculation yields a decimal point, e.g. 101 sample sets x 10% = 10.1 means that 11 sample sets shall be reviewed.

904.4.1.3.4.1.2 For each sample set QA file review, the quality assurance data file(s) shall be reviewed to confirm that data collected in the field (i.e. sample controls) are equal to or better than the minimum rated feature threshold specification inputs for the worst-case energy simulation file for the home(s) that received sample controls for the sample set.

904.4.1.3.4.1.3 If a discrepancy in minimum rated features is identified that requires more stringent threshold specifications for a floor plan, then the worst case projected rating energy simulation file for that plan and home, or for the entire set of homes (as appropriate), subject to sampling shall be reviewed in accordance with 904.4.1.3.5.2.

904.4.1.3.4.2 The QA file review for sampled ratings shall include an initial review of the worst-case energy simulation file for each unique floor plan in order to confirm that minimum rated features and worst-case specifications have been entered into the rating software accurately. An energy simulation file for a particular floor plan is not subject to subsequent review after the initial QA review provided the minimum rated features and threshold specifications do not change as determined by this Section.

904.4.1.3.5 Confirm that paper and/or electronic files, are being maintained and archived by Raters for each rating and/or unique floor plan, including the Rating Software Energy Simulation File and all supporting documentation required to validate the inputs into the rating software file (e.g., architectural drawings, threshold specifications, field data). These files shall be maintained a minimum of three (3) years;

904.4.2 Quality assurance field review (QA field review).

904.4.2.1 For each Rater, the Provider's QA Designee shall be responsible for an annual onsite QA field review of the greater of one (1) home or one percent (1%) of the Rater's annual total of homes for which confirmed or sampled ratings and diagnostic testing services were provided. When determining the number of QA field reviews to complete for a Rater, round up to the next whole number when the percentage calculation yields a decimal point, e.g. $101 \text{ homes} \times 1\% = 1.01$ means that 2 QA field reviews shall be completed.

904.4.2.2 QA field reviews for Rating Field Inspectors (RFIs)

904.4.2.2.1 For Raters utilizing Rating Field Inspectors (RFI's), the QA Designee shall ensure that a QA field review is completed on the greater of one (1) home or one percent (1%) of each RFI's annual total of homes for which confirmed or sampled ratings and diagnostic testing services were provided by the RFI. The RFI QA field reviews may fulfill all or a portion of the Rater's annual QA field review requirement.

904.4.2.2.2 When determining the number of QA field reviews to complete for an RFI, round up to the next whole number when the percentage calculation yields a decimal point, e.g. $101 \text{ homes} \times 1\% = 1.01$ means that 2 QA field reviews shall be completed.

904.4.2.3 QA field reviews shall be conducted on an ongoing basis as appropriate for the volume of ratings being completed, and at a minimum of annually.

904.4.2.4 Each home selected for a QA field review for each Rater shall be randomly selected from as many different builders and communities as possible. Special effort should be taken to make certain that the selected homes are as representative as possible of the homes being rated, i.e. new and existing homes, geographic location, builder, trade contractor, variety of floor plans, etc., which, in some instances, may require more than the minimum (1) home or one percent (1%). For multifamily projects, when selected, QA field review shall include at least one top floor end unit and one bottom floor end unit.

904.4.2.5 As part of the QA field review of confirmed ratings, the QA Designee shall ensure that the minimum rated features of a rating are independently confirmed (i.e. confirmation of geometric characteristics, inspection of minimum rated features, and completion of any necessary performance testing) to determine whether the rating and/or diagnostic testing were accurately completed by the Rater, and determine whether information was completely collected and reported as required in 303.1 of Chapter 3 of these Standards.

904.4.2.6 QA field review of Sampled Ratings. For the purposes of calculating the one (1) home or one percent (1%) QA field review requirement for Rater and RFI sampled ratings, all the homes rated by a Rater, or for which an RFI assisted,

using sampling shall be considered and not just the number of homes tested and inspected. If at least two (2) homes are required for QA field review, a maximum of one (1) of the homes shall be a non-tested, sampled home. To ensure that QA is being completed on Raters and Rating Field Inspectors rather than builders, the balance of homes included in the field QA shall have received field testing and/or inspections.

904.4.2.7 Confirm that HERS Index scores for each home reviewed in accordance with 904.4.2.5 be no more than three percent (3%) (+/-) variation in the HERS Index from the HERS Index result as determined by the QA Designee. When calculating the HERS Index point variance allowed for a given Index, round down to the nearest whole Index point, with the allowable variance never less than two (2) HERS Index points.

904.4.2.8 If a QA Designee is required to complete an onsite QA inspection on at least two (2) homes for a given Rater, the QA Designee may use one centralized – proctored rating QA event, and only one, for review of the Rater in lieu of an independent confirmation of the rating for the home as required for the balance of homes evaluated for the onsite inspection process.

904.4.2.8.1 A centralized proctored rating QA event is defined as a rating that occurs at a house assigned by the QA Designee at which the QA Designee, or their Delegate, must be onsite to ensure that the Rater being reviewed is working completely independently to gather all aspects of the minimum rated features of a home. The Rater being reviewed will not be allowed to communicate by any means with others while gathering information in the home or creating their rating software file and report. The review shall include, but is not limited to, the following:

1. Diagnostic equipment set-up and testing measurements
2. Insulation evaluation and R-value determination
3. Calculations of gross areas, volumes, and square footage of the home
4. Input and creation of the software rating file and reports

904.4.2.8.2 QA under this Section shall adhere to the same variance allowances provided for in Section 904.4.2.5.

904.4.3 Non-compliance of a reviewed rating shall trigger corrective action.

904.4.3.1 The rating shall be corrected in order to come into compliance with RESNET technical Standards under the supervision of the QA Designee.

904.4.3.2 The QA Designee shall develop and implement a corrective action plan for the Rater of the rating that addresses any underlying problems that led to the non-compliant rating.

904.4.3.3 The Provider shall initiate appropriate disciplinary action on the Rater in accordance with the Provider's written Rater disciplinary procedures.

904.4.3.4 Multiple instances of non-compliance with 904.4.2.5 shall, at a minimum, trigger an increased rate of file reviews or onsite inspections of homes and additional appropriate disciplinary action in accordance with the Provider's written Rater disciplinary procedures.

904.5 Significant Non-compliance by QA Providers.

It is the expectation of RESNET that Providers fully comply with all the requirements set forth in these Standards. Discovery of one or more areas of non-compliance via the RESNET QA process, reporting by a QA Designee as part of the Provider's QA process, or in the course of RESNET's research of an ethics or consumer complaint will result in the QA Designee working with a Provider to come back into compliance. However, on occasion, there may be instances where actions by a Provider are truly egregious and, as such, would be deemed to be "significant non-compliance". This Section seeks to define the thresholds when actions by a Provider are deemed to be significant non-compliance, thereby requiring that the QA Designee report the significant non-compliance to RESNET and additional action by RESNET may be taken.

904.5.1 Significant non-compliance by Providers shall include, but not be limited to, the following:

904.5.1.1 Failure to comply with multiple individual requirements, or requirements impacting multiple Raters and/or ratings, for Providers set forth in the RESNET Standards and enumerated in a RESNET Quality Assurance Checklist;

904.5.1.2 Failure of a Provider to comply with the RESNET Standards of Practice, Code of Ethics, or Conflict of Interest Disclosure;

904.5.1.3 Failure to follow a Provider's written Rater disciplinary procedures for known or obvious non-compliance with the RESNET Standards, Standards of Practice, Code of Ethics, or Conflict of Interest Disclosure.

904.5.2 Reporting of significant non-compliance to RESNET.

904.5.2.1 QA Designees must report all significant non-compliance by a Provider to RESNET when it becomes known to the QA Designee so that RESNET may assist the QA Designee in working with a Provider to come back into compliance.

904.5.2.2 Failure of a QA Designee to report significant non-compliance issues may result in actions taken by RESNET as stipulated in Section 905.10.

905 QUALITY ASSURANCE DESIGNEE (QA Designee)

905.1 A Rating Quality Assurance Provider shall designate one and only one officer, employee, or contractor to be the Primary Quality Assurance Designee for the organization, responsible for quality assurance within the organization. This does not preclude a Provider from having more than one QA Designee on staff or as a contractor,

as may be necessary for business models where QA Designees do Ratings. The Primary QA Designee shall have ultimate responsibility, on behalf of the QA Provider, for fulfilling the requirements listed in Section 905.8 and who shall be the single point of contact to RESNET regarding all Quality Assurance matters. All QA Designees shall meet each of the minimum requirements to be a QA Designee as stipulated in this Section.

905.2 The designated officer, employee, or contractor responsible for quality assurance shall meet the following minimum requirements:

905.2.1 Previous certification as a Home Energy Rater;

905.2.2 As a certified Home Energy Rater, complete confirmed ratings on a minimum of twenty-five (25) homes prior to becoming a QA Designee;

905.2.2.1 A QA Designee must confirm that the minimum requirements to be a QA Designee and Delegate, as set forth in this Section 905.2, have been met.

905.2.2.2 Five (5) of the twenty-five (25) required confirmed ratings for a QA Designee must be individually reviewed by a QA Designee, three (3) of which may have been included in the annual QA process for a QA Provider in the previous twenty- four (24) months. The five (5) reviewed ratings shall be field reviews in accordance with section 904.4.2.

905.2.3 To be eligible to QA a particular rating type (e.g. sampled, survey/audit), a QA Designee must have completed a minimum of five (5) of that rating or project type or alternate qualification criteria established by RESNET in consultation with the Quality Assurance Committee;

905.2.4 Passing the RESNET Quality Assurance Designee Test.

905.2.4.1 The requirements of 905.2.2 and 905.2.3 must be met within twelve (12) months of passing the RESNET Quality Assurance Designee Test, or the individual must pass the test again prior to being recognized as a QA Designee.

905.2.5 Submit an application to RESNET and be recognized as a qualified QA Designee.

905.3 Professional Development for QA Designees

905.3.1 All QA Designees annually shall complete a two hour RESNET QA Roundtable on current information AND complete one (1) of the following activities:

905.3.1.1 Document 12 hours of attendance at the RESNET Conference; or

905.3.1.2 Complete 12 hours of RESNET approved CEU's; or

905.3.1.3 Documented field QA reviews on a minimum of 25 homes.

905.3.2 A person that is both a Rater Trainer and Quality Assurance Designee shall have to complete both the two hour RESNET roundtable for a Rater Trainer (see Section 209) and the two hour roundtable for Quality Assurance Designees. Rater Trainers and QA Designees selecting the conference or CEU option need only comply with the 12 hour requirement one time, i.e. 12 hours is not required for each position.

905.3.3 A QA Designee that does not complete the professional development requirements for a given calendar year must:

905.3.3.1 Attend a RESNET roundtable;

905.3.3.2 Have the QA Designee requirements verified in accordance with 905.3;

905.3.3.3 Submit an application to RESNET and be recognized as a qualified QA Designee prior to reinstatement as a QA Designee.

905.3.3.4 If two years have lapsed without a QA Designee completing professional development, the QA Designee must also pass the RESNET Quality Assurance Designee Test again;

905.3.4 A QA Designee must renew annually with RESNET to be recognized as a qualified QA Designee.

905.4 Proof of QA Designee qualifications shall be submitted by Providers with an application for accreditation or with a notification to RESNET of a change to a Provider's QA Designee(s).

905.5 All QA Designees shall have a signed agreement with the Provider to be the Provider's QA Designee.

905.6 Changes to a QA Provider's QA Designee(s)

905.6.1 If a Provider changes Primary QA Designees or a Provider's Primary QA Designee leaves the organization, is terminated as an outside QA Designee contractor, or is no longer eligible to be the QA Designee, the following steps shall be taken:

905.6.1.1 Within five (5) business days of the Primary QA Designee change, departure, termination, or knowledge of ineligibility, the Provider shall inform RESNET of the change, departure, termination, or ineligibility;

905.6.1.2 In the case of a change in Primary QA Designee as a result of departure, termination, or ineligibility, the Provider shall have forty (40) business days from the date of departure, termination, or knowledge of ineligibility to appoint a replacement Primary QA Designee and notify RESNET of the newly designated officer, employee, or contractor, including proof of qualifications in accordance with 905.2.

905.6.2 If a Provider with multiple QA Designees adds or removes a QA Designee, the Provider shall inform RESNET within five (5) business days of the change.

905.7 Quality Assurance Designee Delegate (QA Delegate)

QA Designee's may have the file review and on-site inspection responsibilities performed by a Quality Assurance Designee Delegate. The QA Designee, however, remains responsible for the accuracy and compliance of the Provider's quality assurance program, including reviews and inspections completed by a QA Delegate.

905.7.1 A QA Delegate must be a certified Home Energy Rater and have completed, on a minimum of twenty-five (25) homes, the portion of the inspection or rating process for which the individual is performing quality assurance tasks. In other words, if the QA Delegate is repeating on-site testing and inspections as part of the QA process, that individual must have at least performed these tasks on a minimum of twenty five (25) homes.

905.7.2 The QA Designee is responsible for ensuring that the QA Delegate meets and maintains their qualifications to be a QA Delegate, contained in 905.7.1.

905.8 Responsibilities of a QA Designee.

Responsibilities of the QA Designee shall include:

905.8.1 Maintenance of quality assurance files;

905.8.2 Review of ratings conducted during a new Rater's probationary period. Prior to certifying a Rater Candidate, a Provider's QA Designee shall confirm that the Candidate has satisfactorily completed Rater training from a RESNET accredited Training Provider and satisfactorily completed their probationary ratings in accordance with Section 102.1.2.2.

905.8.3 Monitor the accuracy of the QA Delegate's performance of QA tasks by reviewing the results of the QA process for each QA Delegate (i.e. 1% field verification/10% file verification).

905.8.4 Complete annual submission of QA results to RESNET in accordance with Section 904.2;

905.8.5 With the annual QA submissions to RESNET, provide a listing of the QA Designees performing QA tasks on behalf of the Provider and a listing of the QA Delegates who have undertake QA reviews on behalf of a QA Designee;

905.8.6 In accordance with Section 904.3, annually complete the RESNET QA Checklist for QA Providers;

905.8.7 In accordance with Section 904.4, monitor ratings of all types conducted by certified Raters;

905.8.8 Maintenance of QA Records for all ratings and tax credit verifications shall include:

905.8.8.1 The Quality Assurance Data File for each home that receives QA review at a minimum containing the information required by Section 904.4.1.3.

905.9.8.2 A database of results of all QA reviews for each Rater, including, at a minimum, for each home reviewed;

905.8.8.2.1 Rater name;

905.8.8.2.2 Home address or Registry ID;

905.8.8.2.3 Date rated;

905.8.8.2.4 Date QA reviewed;

905.8.8.2.5 Name of QA Designee or Delegate;

905.8.8.2.6 Whether the review was a file or field review as defined by these Standards;

905.8.8.2.7 The result, including HERS Index variance for field QA, and any action taken by the QA Designee.

905.8.8.3 The QA Record for each home shall be maintained for a minimum of three (3) years.

905.8.8.4 Upon RESNET's request, a QA Provider shall submit to RESNET the QA Records for the specified time period, and the number of homes for which ratings and tax credit verifications were provided for the specified time period. The ratings and tax credit verifications shall be identified by type (to include projected and confirmed ratings for new and existing homes and the number of homes verified for tax credits). To the extent RESNET makes this information public; it will do so only in an aggregated form.

905.9 QA Designee and Certified Home Energy Rater Whistle Blower Protection

905.9.1 A Rating QA Provider shall not retaliate against a QA Designee or Certified Home Energy Rater in the terms and conditions of their status with the Provider for any of the following reasons:

905.9.1.1 Reporting to a supervisor, to RESNET or to a federal, state or local agency what the QA Designee or Rater believes in good faith to be a violation of the RESNET Standards and/or a local, state or federal law; or

905.9.1.2 Participation in good faith in any resulting investigation or proceeding;

OR

905.9.1.3 Exercising his or her rights under any state or federal law(s) or regulation(s) to pursue a claim or take legal action to protect the QA Designees' or Rater's rights.

905.9.2 RESNET may take disciplinary action (up to and including revocation) against a QA Provider who in its assessment has engaged in retaliatory conduct in violation of this policy.

905.10 Failure of a QA Designee to Fulfill Their Responsibilities.

Failure of a QA Designee to properly fulfill their responsibilities as specified in these Standards may include one or more of the following actions by RESNET:

905.10.1 The QA Designee being placed on probation;

905.10.2 Removal of the QA Designee from the RESNET Directory of qualified QA Designees;

905.10.3 Removal of the QA Designee's credential as a QA Designee;

905.10.4 RESNET no longer recognizing the QA Designee as a Home Energy Rater;

905.10.5 At the QA Provider's expense, further oversight by RESNET of the QA Designee and the Provider's processes and procedures;

905.10.6 To the extent that the QA Provider is at fault for the QA Designee's failure to fulfill their responsibilities, the Provider may be subject to probation, suspension or revocation in accordance with Section 911;

905.10.7 The QA Designee may appeal an Action taken by RESNET under this Section using the Appeals procedures stipulated in Section 912 of these Standards.

906 QUALITY ASSURANCE REQUIREMENTS FOR THIRD-PARTY ENERGY EFFICIENCY PROGRAMS

906.1 See Appendix B for definition of Third Party Energy Efficiency Program (EEP).

906.2 Quality Assurance, as specified in Section 904, may be provided by QA Designees for EEP's as part of the RESNET QA process when RESNET and the EEP enter into a formal agreement. Where EEP QA requirements are greater than specified in Section 904, those QA requirements shall be specified in writing by an EEP and provided to RESNET for approval in order to be included in the RESNET QA process.

906.2.1 Unless formally authorized by RESNET, RESNET's oversight of a QA Designee shall only cover areas covered in these Standards and in the RESNET Home Energy Rating Standards of Practice.

906.3 Quality assurance data files and the results of onsite verification of ratings files will be made available by Providers to EEPs only for the EEP's quality assurance initiatives and, additionally, only if the EEP has agreements with rating clients in the program that allow for Raters to release rating information.

906.4 EEP files will be inspected for quality assurance pursuant to section 904.4 and shall include those items related to energy efficiency specific to the EEP that may be in addition to the Home Energy Rating. Significant non-compliance by Providers shall be reported to EEP's when they become known to RESNET.

**907 QUALITY ASSURANCE REQUIREMENTS FOR CONTRACTOR
EDUCATION AND QUALIFICATION (CEQ) PROVIDERS,
ENERGYSMART CONTRACTORS AND ENERGYSMART TEAMS**

907.1 RESNET Quality Assurance of CEQ Providers

907.1.1 RESNET shall select a limited number of CEQ Providers and conduct an annual review of their Quality Assurance records.

907.1.2 A CEQ Provider shall have the right to challenge the findings of RESNET's quality assurance review.

907.1.3 CEQ records that must be reviewed include the following:

907.1.3.1 The CEQ's EnergySmart Contractor Registry;

907.1.3.2 The CEQ's EnergySmart Contractor Agreements;

907.1.3.3 Documentation of CEQ Provider's initial training course and continuing education offerings for EnergySmart Contractors;

907.1.3.4 Documentation of EnergySmart Contractor's Designated Qualification Representative completing required training and testing;

907.1.3.5 Documentation of the Representative's continuing education;

907.1.3.6 The CEQ's EnergySmart Contractor complaint files;

907.1.3.7 Documentation of disciplinary actions.

907.1.4 In the case of an unresolved complaint brought to the RESNET Executive Director, it will be the responsibility of the CEQ to secure the EnergySmart Project files from the EnergySmart Project Manager and present them to RESNET. Failure of the EnergySmart Project Manager to provide adequate records shall result in sanctions up to and including a 60 day suspension of the EnergySmart Contractor designation.

907.1.5 An on-site review by RESNET may be conducted if there are significant inconsistencies or errors in the reviewed CEQ files.

907.1.6 Complaints against a CEQ Provider submitted by the Complaint Resolution Officer (CRO) to RESNET shall be addressed by the Executive Director. The RESNET Executive Director shall:

907.1.6.1 Resolve the complaint in forty-five (45) calendar days.

907.1.6.2 A complaint will be considered resolved once a Complaint Resolution Form has been submitted, signed by the party who filed the complaint and the CEQ Provider.

907.1.6.3 A log of unresolved complaints shall be maintained by the RESNET Executive Director.

907.1.7 CEQ Providers are subject to Probation, Suspension, and Revocation of Accreditation by RESNET in accordance with Section 912 of these Standards.

907.1.7.1 Suspension and Revocation of Accreditation of a CEQ Provider may result from the following:

907.1.71.1 The provisions described in 912.3;

907.1.71.2 Failure to ensure that the EnergySmart Contractor followed the complaint resolution process in the case of a complaint against the EnergySmart Contractor or failure to follow required disciplinary and corrective action with respect to a contractor;

907.1.7.2 RESNET shall comply with the due process and appeals procedures contained in Section 913 of these Standards with respect to disciplinary actions against an accredited CEQ Provider.

907.2 CEQ Provider Quality Assurance of EnergySmart Contractors

907.2.1 The CEQ Provider shall annually verify that the EnergySmart Contractor's representative is still with the company.

907.2.2 Respond to complaints against EnergySmart Contractors.

907.2.3 Follow written EnergySmart Contractor Disciplinary Procedures described in the CEQ Provider's written policies and procedure for EnergySmart Contractors.

907.3 CEQ Provider Complaint Resolution Procedures

907.3.1 The CEQ Provider must conduct non-compliance resolution when a complaint is received about the work performance of an EnergySmart Contractor from any of the following: the client, Rater/Auditor, other EnergySmart Contractors, Final Verifier.

907.3.2 Complaints shall be managed and resolved by the CEQ Provider's CRO following the CEQ Provider's Complaint Response Process.

907.3.3 Each CEQ Provider shall retain records of complaints received and responses to complaints for a minimum of three (3) years after the date of the complaint.

907.3.4 The Complaint Response Process shall include, at a minimum, the following:

907.3.4.1 Consumer Complaint Form, available for submittal via the RESNET website. The form will be forwarded to the CEQ Provider to the attention of the CRO.

907.3.4.2 It is the responsibility of the CEQ Provider to secure the documentation from the EnergySmart Project Manager or Final Verifier for review by the CRO.

907.3.4.3 The CRO shall evaluate the complaint to determine if the contractor shall be deemed to be in non-compliance. Complaints must:

907.3.4.3.1 Be related to either structural or major deficiencies (over \$500) and must impact the energy efficiency of the home.

907.3.4.3.2 Include the work contract(s) and copies of checklists denoting unresolved deficiencies.

907.3.4.3.3 In the event the CRO cannot make a fair evaluation of the complaint based on the information submitted, the consumer shall have the option of hiring an independent Rater/Auditor to visit the site and submit his or her report and findings.

907.3.4.4 The EnergySmart Contractor Complaint Resolution Process shall consist of the following:

907.3.4.4.1 The CRO will notify the contractor of the complaint and the contractor shall have forty five (45) calendar days to resolve the complaint.

907.3.4.4.2 A complaint will be considered resolved once a Complaint Resolution Form has been submitted, signed by both the client and the party against whom the complaint was filed, and the resolution verified by the CRO.

907.3.4.4.3 If the complaint is not resolved in the allotted time, it will be considered unresolved.

907.3.4.5 EnergySmart Contractors with three (3) unresolved complaints within a 90 day period or with five (5) or more unresolved complaints at any given time shall have their certification suspended in accordance with the provisions of 907.3.5.

907.3.4.6 A log of unresolved complaints shall be maintained by the CEQ Provider and must be made available to RESNET upon request.

907.3.5 The minimum requirements for suspension of certification procedures are the following:

907.3.5.1 First Offense: First time an EnergySmart Contractor has three (3) unresolved complaints within a 90 day period or has five (5) outstanding unresolved complaints, the CEQ Provider shall suspend the contractor's certification for a period of not less than 30 days, and:

907.3.5.1.1 Shall inform RESNET that the contractor's certification has been suspended, and shall request that RESNET remove the contractor from the Directory.

907.3.5.1.2 Shall require the contractor, prior to reinstatement, to complete two (2) hours of Continuing Education specific to conflict resolution or customer relations, or successfully resolve at least one of the 90 day old complaints and all of the complaints older than 90 days. CEQ Providers may provide exceptions for complaints that cannot be resolved.

907.3.5.1.3 Shall inform RESNET when the contractor's certification has been reinstated, clarify the resolution, or reasons for not being able to resolve the complaint, and shall request that RESNET reinstate the listing on the Directory.

907.3.5.2 Second Offense: Second time an EnergySmart Contractor has three (3) unresolved complaints within a 90 day period or has five (5) outstanding unresolved complaints, the CEQ Provider shall suspend the contractor's certification for a period of not less than 90 days, and:

907.3.5.2.1 Shall inform RESNET that the contractor's certification has been suspended, and shall request that RESNET remove the contractor from the directory.

907.3.5.2.2 Shall require the contractor prior to reinstatement to complete three (3) additional hours of Continuing Education and successfully resolve at least one of the 90 day old complaints and all of the complaints older than 90 days. CEQ Providers may provide exceptions for complaints that cannot be resolved.

907.3.5.2.3 Shall inform RESNET when the contractor's certification has been reinstated, clarify the resolution, or reasons for not being able to resolve the complaint, and shall request that RESNET reinstate the listing on the Directory.

907.3.5.3 Third Offense: Third time an EnergySmart Contractor has three (3) unresolved complaints within a 90 day period, or has five (5) outstanding unresolved complaints, the CEQ Provider shall suspend the contractor's certification for a period of not less than twelve (12) months, and:

907.3.5.3.1 Shall inform RESNET that the contractor's certification has been suspended, and shall request that RESNET remove the contractor from the Directory.

907.3.5.3.2 Shall require the contractor, prior to reinstatement, to complete three (3) additional hours of Continuing Education and successfully resolve all of the outstanding complaints. CEQ Providers may provide exceptions for complaints that cannot be resolved.

907.3.5.3.3 Shall inform RESNET when the contractor has met the requirements of 907.3.5.3.2, clarify the resolution, or reasons for not being able to resolve the complaint. RESNET approval shall be required for reinstatement of certification and RESNET shall reinstate the contractor's listing on the Directory if appropriate.

907.4 Quality Assurance Provider Quality Assurance Review of Rater Final Verification of EnergySmart Projects

907.4.1 The QA Provider will have a Quality Assurance (QA) Designee that shall perform QA review of a Raters' Final Verification of an EnergySmart Project.

907.4.2 Quality Assurance File Review (QA File Review)

907.4.2.1 For each Rater/Auditor that performs Final Verification for an EnergySmart Project, the QA Provider's QA Designee shall annually conduct QA File Review of the Final Verification documentation file(s) the greater of one (1) projects or ten percent (10%) of the Contractor's annual total of projects completed. When determining the number of projects to review for a Contractor, round up to the next whole number when the percentage calculation yields a decimal point, e.g. 101 projects x 10% = 10.1 means that 11 projects shall be reviewed.

907.4.2.1.1 Project documentation file(s) shall include

907.4.2.1.1.1 A copy of the original work scope and signed proposal;

907.4.2.1.1.2 Rater/Auditor and Contractor names and contact information;

907.4.2.1.1.3 Program sponsor name, completed final verification checklist;

907.4.2.1.1.4 Energy simulation software file;

907.4.2.1.1.5 All test out results.

907.4.2.1.2 When the QA Provider's QA Designee conducts the QA File Review, they shall review at least one (1) project documentation file for each EnergySmart Contractor and EnergySmart Team. The QA Designee shall equitably distribute the QA File Reviews of each individual EnergySmart Contractor's or Team's Projects.

907.4.2.2 The QA Designee will confirm that each EnergySmart Contractor for the project has been approved by a RESNET-approved CEQ Provider as demonstrated by listing on the RESNET EnergySmart Contractor Directory.

907.4.2.3 The QA Designee will verify the completion of the Rater Final Verification checklist.

907.4.2.3.1 There must be consistency between the Final Verification Checklist and final test out results, copy of work scope, and signed proposal.

907.4.2.3.2 Must include reported results of nonconformance by Final Verification.

907.4.2.4 The QA Designee will review 10% of the Rater/Auditor Final Verifier energy simulation software file and projected estimated energy savings.

907.4.3 Quality Assurance Field Review (QA Field Review)

907.4.3.1 For each Rater/Auditor that performs Final Verification for an EnergySmart Project the QA Designee shall annually conduct QA Field Reviews of EnergySmart Projects at a rate of 1% of verified projects or one project, whichever is greater. QA Field Review shall include the greater of one (1) project or ten percent (10%) of each Contractor's annual total of projects completed. When determining the number of projects to review for a Rater and Contractor, round up to the next whole number when the percentage calculation yields a decimal point, e.g. 101 projects x 1% = 1.01 means that 2 projects shall be reviewed.

907.4.3.2 The QA Designee shall confirm the results of the Final Verifier's combustion appliance testing where applicable.

907.4.3.2.1 Where there are vented combustion appliances that use indoor air to vent combustion gasses, re-test Worst Case Depressurization in accordance with the QH Standard.

907.4.3.2.2 Where any spaces contain combustion appliances, re-test for Carbon Monoxide in accordance with the QH Standard.

907.4.3.3 The QA Designee shall review the work scope and signed proposal, and shall confirm installed measures are consistent with selected measures and work scope in accordance with the QH Standard.

907.4.3.4 The QA Designee shall confirm the Final Verifier's Estimate of Project Energy Savings as follows:

907.4.3.4.1 Calculate an independent estimate of projected energy savings for the EnergySmart Project using the same RESNET-approved software used by the Final Verifier.

907.4.3.4.1 Compare the Final Verifier’s final estimated energy savings against the QA Designee’s independent calculation of estimated energy savings.

907.4.3.4.2 The QA Designee’s results must be no more than three percent (3%) (+/-) variation in the HERS Index from the HERS Index result as determined by the QA Designee.

907.4.4 Non-Compliance and Resolution

907.4.4.1 Reporting: Non-compliance of an EnergySmart Project with respect to installed measures or estimate of projected energy savings shall be reported to the CEQ Provider’s Compliant Resolution Officer (CRO).

907.4.4.2 Discipline: Non-compliance of the Final Verifier’s Final Verification of an EnergySmart Project with respect to installed measures or estimate of projected energy savings shall result in additional action in accordance with the QA Provider’s written Disciplinary Procedures.

907.4.4.3 Record-Keeping: Rating Providers shall maintain Quality Assurance records for every EnergySmart Project that has received Documentation or On-Site QA Review for a period of no less than three (3) years and that will include the following:

907.4.4.3.1 Copy of work scope and signed proposal;

907.4.4.3.2 Names and contact information of the Rater/Auditor, ES Contractors, and Final Verifier;

907.4.4.3.3 Program sponsor name;

907.4.4.3.4 Completed final verification checklist;

907.4.4.3.5 All test out results;

907.4.4.3.6 QA Review Results.

908 QUALITY ASSURANCE COMMITTEE AND ETHICS AND APPEALS COMMITTEE

908.1 Quality Assurance Committee

908.1.1 Committee Membership. The Quality Assurance Committee (QA Committee) shall be chaired by a member of the RESNET Board of Directors. The Chair shall be approved by the RESNET Board. Nominations of Committee members shall be made by the Chair.

908.1.2 Committee Responsibilities. The QA Committee shall have:

908.1.2.1 Oversight of RESNET's rating quality assurance program as defined in this chapter. The Committee shall report to the RESNET Board of Directors.

908.2 Ethics and Appeals Committee

The Ethics and Appeals Committee shall have the responsibility of investigating ethics and consumer complaints and hearing appeals of an Application or Renewal Application that has been denied, or if a Provider has been placed on probation, or if a Provider's accreditation has been suspended or revoked. The Committee shall report to the RESNET Board of Directors.

908.2.1 Committee membership. The Ethics and Appeals Committee shall be chaired by a member of the RESNET Board of Directors. The Chair shall be approved by the RESNET Board. Nomination of Committee members shall be made by the Chairman. The Committee shall be composed of a minimum of five (5) members, but no more than seven (7) members including the chairman. The Committee shall consist of a minimum of two (2) Home Energy Raters and a minimum of two (2) representatives of Provider organizations.

908.2.2 Committee Responsibilities. The Ethics and Appeals Committee shall have the responsibility of investigating ethics and consumer complaints and hearing appeals of an Application or Renewal Application that has been denied, or if a Provider has been placed on probation, or if a Provider's accreditation has been suspended or revoked.

909 ETHICS AND COMPLAINT COMPLAINTS

909.1 Filing of Ethics and Compliance Complaints

909.1.1 Ethics complaints may be filed for violation of the RESNET Code of Ethics.

909.1.2 Compliance Complaints may be filed for failures to comply with the RESNET Standards

909.1.3 Complaints shall document the alleged violation(s) or compliance issue(s). The complaint shall also be specific about which section(s) of the Code of Ethics or the RESNET Standards have been violated. To be considered, the full and complete complaint shall be submitted on the RESNET's online ethics or compliance complaint form posted on the RESNET web-site and contain the following information:

909.1.3.1 The name of the complainant and contact information;

909.1.3.2 The name of the party that is the subject of the complaint;

909.1.3.3 A complete description of the alleged violation(s);

909.1.3.4 A recitation of all the facts documenting the complaint;

909.1.3.5 Copies of all relevant documents.

909.2 Investigation of Complaints

909.2.1 Upon receipt of a complaint, the RESNET Executive Director shall assign a case number and RESNET staff shall review the evidence submitted. The Chair of the Ethics and Appeals Committee shall be informed. RESNET staff shall consider the documentation contained in 909.1.2 in making a decision whether to proceed or dismiss the complaint.

909.2.2 In cases where RESNET staff finds the documentation submitted does not meet the minimum standards for an ethics or compliance complaint, the complaint may be dismissed. Both parties shall be notified of RESNET staff's finding by electronic mail.

909.2.3 Upon a decision by RESNET staff that the complaint should proceed to the next step, the RESNET Executive Director shall send a copy of the complaint by electronic mail to the subject of the complaint immediately. The respondent has 20 business 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 electronic mail.

909.2.4 Upon receipt of the response, the RESNET Executive Director shall immediately forward the response to the RESNET Ethics and Appeals Committee for consideration and action. Within thirty (30) business days of receiving the complaint, the Ethics and Appeals Committee shall take action on the complaint. The action may include, but is not limited to:

909.2.4.1 Dismissal of complaint;

909.2.4.2 Require that steps be taken by the subject of the complaint to correct the problem; and/or

909.2.4.3 Specify sanctions under Section 912 (Probation, Suspension and Revocation of Accreditation) of this chapter.

909.2.5 All parties to the complaint shall be informed by electronic mail of the Ethics and Appeals Committee's action.

909.2.6 Complainants shall have the right to appeal the decision of RESNET Staff and the Ethics and Appeals Committee in accordance with Section 913 of these Standards.

909.2.7 All complaints, responses, and supporting documentation received by RESNET shall be handled in strict confidence by RESNET staff, the Ethics and Appeals Committee and the Board of Directors.

910 ACCREDITATION COMMITTEE

910.1 Committee Membership.

The Accreditation Committee shall be chaired by a member of the RESNET Board of Directors. The Chair shall be approved by the RESNET Board. Nominations of Committee members shall be made by the Chair.

910.2 Committee Responsibilities. The Accreditation Committee shall be responsible for the review and approval of all Applications for Provider accreditation.

911 PROVIDER ACCREDITATION AND RENEWAL PROCESS

911.1 National Registry of Accredited Providers

RESNET shall maintain a national registry of organizations accredited as Providers in each Provider accreditation category and will post the registry on its web site. The registry for each Provider accreditation shall serve as the current and definitive list of RESNET accredited providers.

911.2 Provider Accreditation Process

911.2.1 An entity seeking accreditation must file with RESNET an application for the specific Provider category for which they seek accreditation. RESNET shall create the applications for each accreditation category.

911.2.2 Confidentiality of Information. Any applicant for a Provider accreditation who wishes to have certain information in their application treated as confidential in order to limit disclosure shall, at the time of submission, attach a statement specifying the proprietary information and requesting confidentiality.

911.2.3 Review and Notification.

911.2.3.1 RESNET staff action. Within twenty (20) business days of receipt of an application, RESNET staff will review the application to determine whether the applicant and its Raters are eligible for accreditation in accordance with the specific requirements for each Provider category. Upon completion of the review, RESNET staff shall do one of the following:

911.2.3.1.1 Request for additional information. If additional information is required in order to complete the review of the application, the application shall be returned to the applicant along with a written request for additional information. Upon receipt of additional information, RESNET staff shall have twenty (20) business days to take action in accordance with 910.2.3.1.2 or 910.2.3.1.3

911.2.3.1.2 Recommendation for approval. If RESNET staff is satisfied that an application is complete and meets all the requirements for accreditation, they

shall make a recommendation to the Accreditation Committee that the application be approved.

911.2.3.1.3 Recommendation for denial. If RESNET staff is not satisfied that an application is worthy of approval for accreditation, they shall make a recommendation to the Accreditation Committee that the application be denied and provide an explanation of the reasons for the recommendation (i.e. incompleteness, failure to meet/comply with a specific accreditation requirement, etc.).

911.2.3.2 Accreditation Committee action. Within fifteen (15) business days of receipt of a recommendation for approval or denial from RESNET staff, the Committee shall do one of the following:

911.2.3.2.1 Request for additional information. If the Committee requires additional information, the application shall be returned to the applicant along with a written request for additional information. Upon receipt of additional information, the Committee shall have twenty (20) business days to render a decision in accordance with 910.2.3.2.2 or 910.2.3.2.3.

911.2.3.2.2 Approve the application.

911.2.3.2.3 Deny the application. If an application is denied, RESNET staff shall inform the applicant in writing of the reasons for denial. Additionally, the applicant shall be informed of their right of appeal under Section 913 of this Chapter.

911.2.3.3 Within ten (10) business days of a decision by the Committee, RESNET staff shall inform the applicant in writing of the status of their application.

911.2.4 For each approved Provider accreditation application, RESNET shall issue a unique Accreditation Identification Number (AIN) to the Provider. In accordance with 911.1, the accredited Provider will be incorporated into the respective national registry of accredited Providers.

911.2.5 Term of accreditation.

911.2.5.1 All Provider accreditations shall be valid for a term of one calendar year and shall be renewed annually on January 1st upon successful completion and approval by RESNET of an application for renewal in accordance with Section 911.3.

911.2.5.2 For first time applicants approved after September 1st, for any Provider category, initial accreditation is valid through the end of the calendar year, i.e. renewal of the accreditation shall not be required for the calendar year in which the application was approved.

911.3 Accreditation Renewal Process

911.3.1 Accredited Providers must submit an “application for renewal” (renewal application) with RESNET no later than October 1st of each calendar year. By September 1st, RESNET shall send to each Provider a renewal application and reminder of the deadline for submission.

911.3.2 Program element changes. At the time of submitting a renewal application, it is the accredited Provider’s responsibility to inform RESNET of any substantive changes in the Provider’s operating policies and procedures or other information that affects meeting the minimum accreditation criteria for each Provider category for which it is seeking renewal. Changes will be evaluated by RESNET in the same manner as the original application for accreditation.

911.3.3 Successful renewals. Successful renewals will be posted on the national registry and communicated to the applicant by RESNET.

911.3.4 Late applications.

911.3.4.1 Renewal applications received after the deadline for submission are not guaranteed to be approved prior to the end of the calendar year. Should an accreditation with a late renewal application expire prior to approval, the RESNET Accreditation Committee, at its sole discretion, may grant an extension with a grace period not to exceed twenty (20) business days.

911.3.4.2 Renewal applications not given an extension or not approved prior to the end of the grace period shall be noted as “pending” on the national registry and the applicant will be advised to cease representing themselves as accredited until the application receives approval.

911.3.5 Accreditation not renewed. Accredited Providers that elect not to renew or fail to meet renewal requirements will be removed from the national registry and be so advised in writing. Providers have the right to appeal a non-renewal decision in accordance with Section 913 of this Chapter.

911.3.6 Accreditations in appeal. Provider accreditations that have not been renewed and are under appeal will be noted as “pending” on the national registry until the appeal is resolved. Providers will be advised to cease representing themselves as accredited.

912 PROBATION, SUSPENSION, AND REVOCATION OF ACCREDITATION

912.1 Notification.

RESNET shall provide written notification to Providers of any decisions under this section. All notices shall be sent by certified mail, or other method which provides evidence of delivery. All notices shall clarify the procedures being followed, as stipulated

in this Standard, and include, where applicable, a statement of the Provider's rights to appeal under Section 913 of this Chapter.

912.2 Probation

If RESNET determines at any time that a Provider has failed to adhere to the accreditation requirements set forth in these Standards, RESNET shall notify the Provider of the specified deficiencies and shall require that specific corrective action, set forth in the notification, be taken within a specified time after the date set forth in such notification. A notice of probation may be appealed under Section 913 of this Chapter.

912.2.1 Types of probation:

912.2.1.1 Administrative Probation. Results from violations found through a Provider's QA process, RESNET quality assurance monitoring or through the RESNET complaint resolution process. RESNET shall notify the Provider of the specified deficiencies and shall require that specific corrective action, set forth in the notification, be taken not later than twenty (20) business days after the date set forth in such notification. Probations resulting from these violations shall remain confidential. These violations may include but not limited to:

912.2.1.1.1 Failure to submit to RESNET any material information required to be submitted by the Provider, in accordance with obtaining or maintaining accreditation;

912.2.1.1.2 Failure to make changes/updates to a Provider's Policies and Procedures;

912.2.1.1.3 Failure to report a change in any QA Designee to RESNET;

912.2.1.1.4 Failure to adhere to requirements for quality assurance of Raters that causes a minor deficiency in the QA of one or more Raters;

912.2.1.1.5 Failure to adhere to requirements for Rater certification and re-certification;

912.2.1.1.6 Failure to enforce corrective action requirements for Raters having non-conforming QA results;

912.2.1.1.7 Failure to adhere to one or more provisions of the RESNET Standards.

912.2.1.2 Disciplinary Compliance Probation. More serious compliance violations found through a Provider's QA process, RESNET quality assurance monitoring or through the RESNET complaint resolution process. RESNET shall, at its discretion, make a final determination regarding the necessity of posting a probation resulting

from these violations on the RESNET web site. These violations may include but are not limited to:

912.2.1.2.1 Failure to correct the terms of an administrative probation during the time period defined in the issuance of probation;

912.2.1.2.2 Failure to replace a Primary QA Designee within the time frame required by these Standards;

912.2.1.2.3 Investigated and validated ethics or compliance complaints against a Provider;

912.2.1.2.4 Failure to follow complaint resolution process regarding actions of the Provider or their Raters;

912.2.1.2.5 Failure to follow a Provider's Rater Disciplinary procedures.

912.3 Suspension

912.3.1 At the discretion of RESNET, any Provider accredited by RESNET may have their accreditation suspended in any of the following circumstances but are not limited to:

912.3.1.1 A Provider has had more than one (1) Disciplinary Probation violation within a twelve-month period;

912.3.1.2 Failure to correct the terms of a Disciplinary Probation during the time period defined in the notice of probation;

912.3.1.3 Submission of false information to RESNET in accordance with obtaining or maintaining accreditation;

912.3.1.4 Misrepresentation of any accreditation or certification status in marketing materials, or services offered or actually provided, for which the Provider organization does not possess the appropriate RESNET accreditation or affiliated individuals do not possess the appropriate RESNET certification;

912.3.1.5 Knowingly registering fraudulent ratings to the RESNET Registry by Rating Providers;

912.3.1.6 Willful misconduct;

912.3.1.7 A Provider shall at a minimum be placed on suspension if they have any Disciplinary Probation violations within twelve months of reinstatement from a suspension.

912.3.2 RESNET shall notify the Provider that their accreditation has been suspended and, unless the Provider chooses to appeal, the Provider shall be removed from the RESNET Provider Directory.

912.3.3 RESNET shall post Providers whose accreditation has been suspended. The Provider's suspension listing shall be removed when the Provider successfully complies with the terms of the suspension.

912.3.4 RESNET shall electronically inform accredited QA Providers, Rating Software Providers, Rater Trainers and Home Energy Raters of a QA Provider's accreditation suspension.

912.3.5 Prior to reinstatement, the Provider shall:

912.3.5.1 Successfully resolve the issue(s) that resulted in the Provider being suspended;

912.3.5.2 Inform RESNET in writing as follows:

912.3.5.2.1 That 912.3.1.3.1 has been completed;

912.3.5.2.2 Stating the steps taken to resolve the issue(s);

912.3.5.2.3 Stating the steps that will be taken to prevent the issue(s) from occurring again in the future; and

912.3.5.2.4 Requesting that RESNET reinstate the Provider's listing on the Directory.

912.4 Revocation

912.4.1 At the discretion of RESNET, any Provider accredited by RESNET may have their accreditation revoked in any of but not limited to the following circumstances:

912.4.1.1 A Provider has had more than two (2) Disciplinary Probation violations within a twelve month period;

912.4.1.2 In the event that deficiencies stipulated in a notice of suspension have not been remedied within the period set forth in such notice;

912.4.1.3 Pursuant to any of the express provisions of sections 911.3.5, non renewal;

912.4.1.4 Provider goes out of business;

912.4.1.5 Upon expiration of a Provider's right to appeal a suspension of accreditation pursuant to Section 912 of this Chapter;

912.4.1.6 Fraud.

912.4.2 RESNET shall notify the Provider that their accreditation has been revoked and, unless the Provider chooses to appeal, the Provider shall be removed from the RESNET Provider Directory.

912.4.3 RESNET shall post Providers whose accreditation has been revoked. The Providers revocation listing shall be removed when the Provider successfully complies with the terms of the revocation.

912.4.4 RESNET shall electronically inform accredited QA Providers, Rating Software Providers, Rater Trainers and Home Energy Raters of a QA Provider's accreditation revocation.

912.5 Probation/Suspension/Revocation Due Process

RESNET shall comply with the following due process procedures in considering any probation, suspension or revocation actions against an accredited Provider.

912.5.1 RESNET may, at its discretion, initiate a probation, suspension or revocation action against an accredited Provider by providing the Provider written notice of the action. Such notice shall inform the subject Provider of the entire basis and justification for the action.

912.5.2 Providers have the right to appeal a probation, suspension or revocation action in accordance with Section 912 of this Chapter.

912.5.3 Upon the expiration of the notice to appeal period, failure to submit appeal documentation, as stipulated in Section 912, or the conclusion of the appeals process in which a Provider's appeals are unsuccessful. RESNET will remove the Provider's name and any directory listing from the RESNET website and post their probation, suspension or revocation status on the RESNET website with other Providers and Raters who are under probation, suspension or revocation, and will, at a minimum, inform the EEP of their suspended/revoked status.

912.5.4 For any QA Providers who have their accreditation revoked or suspended in accordance with Section 912.3 or 912.4,

912.5.4.1 RESNET will inform the Provider's known clients, Raters, rating software suppliers and any known affected EEP's of the Provider's suspended/revoked status. To the extent practicable, the Provider shall assist RESNET with notifications.

913 APPEALS PROCEDURES

913.1 Appeals shall be made first to the RESNET Ethics and Appeals Committee, then to the RESNET Board of Directors.

913.2 Within five (5) business days after receipt of an appealable action by RESNET, the Appellant shall notify the RESNET Executive Director of their intent to appeal. The Appellant shall then have ten (10) business days after the date of notice to submit appeal documentation to the RESNET Executive Director.

913.3 Appeals shall include all relevant information and documentation and be sent in writing by electronic mail to the RESNET Executive Director.

913.4 During the appeals process, all parties to the appeal may petition the body hearing the appeal (i.e. the RESNET Ethics and Appeals Committee or RESNET Board of Directors) for a stay of action until the expiration of the appeals process. A decision on the petition shall be rendered by the hearing body not later than five (5) business days after receipt of the petition.

913.5 At the time of noticing its appeal to the RESNET Ethics and Appeals Committee, the Appellant may request a telephonic hearing, which gives the Appellant the opportunity to provide oral arguments in favor of their appeal. In such an event, RESNET shall, not later than ten (10) business days after the filing of the notice of appeal, notify all parties to the appeal of the date of the hearing, which shall be held as expeditiously as possible, but not later than twenty (20) business days after the receipt of the notice of appeal.

913.6 Within ten (10) business days of receiving the appeal, or the date of a hearing, the Ethics and Appeals Committee or Board of Directors shall render a decision on the appeal. In the event that additional information is requested, a one-time extension of ten (10) business days may be applied in order to allow the appellant sufficient time to respond.

913.7 All parties to the appeal shall be informed by electronic mail of the decision.

913.8 All appeals documentation received by RESNET shall be handled in strict confidence by RESNET staff, the Ethics and Appeals Committee and the Board of Directors.



Setting the **Standards** for
Home Energy Efficiency

RESNET 2013 Rating Quality Assurance Submittal

RESNET Accredited QA Provider and Primary Quality Assurance Designee:

RESNET requires that Quality Assurance (QA) Providers annually provide documentation as part of RESNET's Quality Assurance Review of QA Providers. This quality assurance review is covered under sections 903 and 904 of RESNET Standards. Additionally, each year a limited number of QA Providers are subject to enhanced quality assurance review for compliance with RESNET Standards requirements. The year of the QA Submittal is based upon the rating year of the QA results being requested. The RESNET 2013 QA Submittal includes documentation of file and field QA review of ratings completed by certified Raters in the year 2013.

The required RESNET QA submittal by all QA Providers will include the following two distinct parts:

- 1- Submittal of documentation of all 2013 quality assurance activities by QA Providers for each of their certified Raters and Rating Field Inspectors, including documentation of file and field QA reviews of year 2013 ratings in accordance with RESNET Standards.**

The completion of file and field quality assurance review is required by section 904.4 of RESNET Standards.

A complete submittal of quality assurance review documentation for ratings conducted in 2013 will clearly indicate for each Rater and Rating Field Inspector certified by the QA Provider:

1. Total number of homes rated or inspected in 2013;
2. Number of homes entered into the RESNET National Home Registry;
3. Total number of files QA reviewed (QA File Review) in 2013;
4. Total number of homes QA reviewed (QA Field Review) in 2013;
5. Documentation of each file and field review in spreadsheet format or similar compiled format at a minimum including:



Setting the **Standards** for
Home Energy Efficiency

- a. Home address,
 - b. Date rated,
 - c. Date file QA reviewed (where applicable),
 - d. Date home QA reviewed (where applicable),
 - e. Name of QA Designee or Delegate that reviewed,
 - f. Findings of QA review;
6. Explanation of any failure to meet the minimum QA requirements.

The documentation of QA results will be submitted on the online Quality Assurance Checklist.

2- Completion and submittal of the RESNET Quality Assurance Checklist by the Provider's Primary QA Designee;

<http://www1.resnet.us/programs/qad/checklist.aspx>

The completion of this Checklist is required by section 904.3 of RESNET Standards. Compliance with RESNET Quality Assurance Standards and to remain good standing with RESNET requires completion of the Checklist and compliance with all individual requirements.

The Primary QA Designee for the Provider must review each item, and must provide the completed checklist to RESNET with a brief description of the Status of the Provider's compliance with the item along with a brief description of any action being taken to achieve compliance. Descriptions of "Status" should be as succinct as possible.

It is each QA Provider's responsibility to comply with all requirements of accreditation and quality assurance and to keep abreast of changes to those requirements. The review of this checklist is based upon current Provider practices and current RESNET Standards.

Both Part I and Part II of your RESNET Quality Assurance Monitoring submittal must be received electronically not later than March 31, 2014.

You are encouraged to review the RESNET Policy Regarding Timely Submissions of RESNET Requirements at <https://www.resnet.us/programs/providers/requirements.htm>.



RESNET Quality Assurance Checklist

In accordance with RESNET Standards 904.3, RESNET shall develop a Quality Assurance Checklist that is to be used by QA Designees for the purpose of verifying a Provider's compliance with the individual requirements for Providers set forth in the RESNET Standards. Every item on the checklist should be checked for compliance, accuracy and completeness annually, and the Provider must keep a copy of each annual checklist for a minimum of three (3) years. Also, the checklist must be completed by a new QA Designee when a Provider makes a change to their Primary QA Designee.

The Primary QA Designee for the Provider must review each item, and must provide a brief description of the Status of the Provider's compliance with the item along with any action being taken to achieve compliance. The completed Checklist must be provided to RESNET upon request or where indicated by Section 904.5 of RESNET Standards in instances of Significant Non-Compliance.

[Link to RESNET Standards](#)

Provider Name: _____

Primary QA Designee: _____

Date Completed: _____

Item	Section	QAD Initials	Item Description	Status
1	102.1.1		Written Quality Assurance Process that conforms to Chapter 9 of RESNET Standards and any specific QA requirements for other Provider categories.	
2	102.1.2.1		Documentation that Rater(s) meet the Rater certification provisions of 102.1.2.1, 102.1.2.2, and 207.1.	
3	102.1.2.3		Documentation of professional development for all active raters in compliance with current professional development requirements.	
4	102.1.2.6		All signed rater agreements in compliance with 102.1.2.6.1-3.	
5	102.1.4		Confirm "Home Energy Rating Provider's Operation Policies and Procedures" and compliance with subsections 102.1.4.1-5.	
6	102.1.4.6		"Written Conflict of Interest Provisions" as part of Operations Policies and Procedures.	
7	102.1.4.6		Documentation of disclosures provided to clients, including compliance with 303.3.2.9, with description of process to distribute disclosures.	
8	102.1.4.7		"Written Rater Discipline Procedures" as part of Operations Policies and Procedures.	
9	102.1.4.8		Current Rater registry.	
10	102.1.4.9		Complaint response system, process for informing purchasers and recipients of ratings about the complaint system, and records of complaints.	
11	102.1.4.10		Electronic database of information for each home rated or verified for the tax credit.	
12	102.1.4.11		Site data collection manual that at a minimum includes Appendix A is provided to Raters, and Raters are confirming Minimum Rated Features in accordance with 303.6-7 and Appendix A.	
13	103.1		Rating software version is current in accordance with 103.2 and software is properly licensed per 102.1.3.	
14	802.9 & 803.9		Written log of the annual calibration check to verify all equipment accuracy for a period of three (3) years.	
15	904.4.1		Annual rating data file review of greater of one (1) home or ten percent (10%) of each Rater's annual total number of homes for which confirmed or sampled ratings were performed, in accordance with 904.4.1.1-3.	
16	904.4.2		Annual onsite field evaluation of greater of one (1) home or one percent (1%) of each Rater's annual total number of homes for which confirmed or sampled ratings were performed, in accordance with 904.4.2.1-8.	
17	904.5		Significant non-compliance reported to RESNET.	

Provider Name: _____

Primary QA Designee: _____

Date Completed: _____

Item	Section	QAD Initials	Item Description	Status
18	905.1 ^a		Primary QA Designee is named, documentation that all QA Designees meet requirements of 905.2.1-4 and 905.3.2 as verified by a QA Designee, and QA of a QA Designee's ratings (where applicable) meets 904.1.	
19	905.4		All QA Designees meet ongoing Professional Development requirements.	
20	905.6		All signed QA Designee agreements.	
21	905.8		QA Designee Delegates meet requirements of 905.8.1-2, and performance is evaluated by QA Designee in accordance with 905.9.3.	
22	905.9.8		QA record for each home is maintained in accordance with 905.9.8.1-3.	
23	906		Rating data files for EEP qualified homes are maintained in accordance with 906.2 and subject to quality assurance review in accordance with 906.4 and 904.4.	
24	603.9		Sampling Providers: Confirm compliance with Quality Assurance provisions specific to sampling, particularly but not limited to 603.9.1 related to compliance with the sampling process outlined in 603.1-8.	

^a All individuals qualified as QA Designees prior to January 1, 2011 are not required to meet any new requirements of 905.2 established on January 1, 2011 in order to maintain qualification.

QAD Roundtable

February 25th, 2014

“Results from 2013 and strategies for success in 2014”

Presented by
Abe Kruger and Laurel Elam

Item 1

- Requirement
 - Written Quality Assurance Process that conforms to Chapter 9 of RESNET Standards and any specific QA requirements for other Provider categories.
- How implemented
 - Included as part of the Provider's written Operation Policies and Procedures
 - NOTE: must have P&P separate from RESNET Standards

Item 2

- Requirement
 - Documentation that Rater(s) meet the Rater certification provisions of 102.1.2.1, 102.1.2.2, and 207.1.
- How implemented
 - Rater Registry states certification date
 - Raters listed in National Building Registry
 - Documentation of probationary Ratings

Item 3

- Requirement
 - Documentation of professional development for all active raters in compliance with current professional development requirements.
- How implemented
 - Document (Excel, database, etc.) tracking CEUs

Item 4

- Requirement
 - All signed rater agreements in compliance with 102.1.2.6.1-3.
- How implemented
 - Stand alone rater agreement; OR
 - Rater agreement part of Policies & Procedures
- QAD will upload a sample rater agreement on online checklist

Item 5

- Requirement
 - Confirm “Home Energy Rating Provider’s Operation Policies and Procedures” and compliance with subsections 102.1.4.1-5.
- How implemented
 - Write and maintain Operation Policies and Procedures document
 - NOTE: must have P&P separate from RESNET Standards
- QAD will upload policies and procedures manual on online checklist

Item 6

- Requirement
 - “Written Conflict of Interest Provisions” as part of Operations Policies and Procedures.
- How implemented
 - Write and maintain Operation Policies and Procedures document
 - NOTE: must have P&P separate from RESNET Standards

Item 7

- Requirement
 - Documentation of disclosures provided to clients, including compliance with 303.3.2.9, with description of process to distribute disclosures.
- How implemented
 - Include in Operation Policies and Procedures document
 - Review disclosure forms for all homes receiving QA
 - Must be signed
- QAD will upload a disclosure form for each rater on online checklist

Item 8

- Requirement
 - “Written Rater Discipline Procedures” as part of Operations Policies and Procedures.
- How implemented
 - Write and maintain Operation Policies and Procedures document
 - NOTE: must have P&P separate from RESNET Standards

Item 9

- Requirement
 - Current Rater Registry.
- How implemented
 - Create and maintain a Rater Registry that includes at a minimum:
 - Rater certification date
 - CEUs
 - QA
 - Ratings per Rater
- QAD will upload rater registry on online checklist

Item 10

- Requirement
 - Complaint response system, process for informing purchasers and recipients of ratings about the complaint system, and records of complaints.
- How implemented
 - Include in the Operation Policies and Procedures document

Item 11

- Requirement
 - Electronic database of information for each home rated or verified for the tax credit.
- How implemented
 - Create and maintain a Rater Registry that includes at a minimum:
 - Rater certification date
 - CEUs
 - QA
 - Ratings per Rater
 - Tax credit status
 - EEP documentation

Item 12

- Requirement
 - Site data collection manual that at a minimum includes Appendix A is provided to Raters, and Raters are confirming Minimum Rated Features in accordance with 303.6-7 and Appendix A.
- How implemented
 - Include in the Operation Policies and Procedures document

Item 13

- Requirement
 - Rating software version is current in accordance with 103.2 and software is properly licensed per 102.1.3.
- How implemented
 - Include in the Operation Policies and Procedures document

Item 14

- Requirement
 - Written log of the annual calibration check to verify all equipment accuracy for a period of three (3) years.
- How implemented
 - Include in the Operation Policies and Procedures document
 - Create calibration log (Excel, database, etc.) to track

Item 15

- Requirement
 - Annual rating data file review of greater of one (1) home or ten percent (10%) of each Rater's annual total number of homes for which confirmed or sampled ratings were performed, in accordance with 904.4.1.1-3.
- How implemented
 - Track in the Rater Registry
 - Include process/procedure in Policies & Procedure Manual
- QAD will upload a rating data review information on online checklist

Item 16

- Requirement
 - Annual onsite field evaluation of greater of one (1) home or one percent (1%) of each Rater's annual total number of homes for which confirmed or sampled ratings were performed, in accordance with 904.4.2.1-8.
- How implemented
 - Track in the Rater Registry
 - Include process/procedure in Policies & Procedure Manual
- QAD will upload field QA review information on online checklist

Rating Field Inspectors (RFI)

- 904.4.2.2 QAD shall ensure that an annual onsite field evaluation of the greater of one (1) home or one percent (1%) of the RFI's annual total of homes for which data was collected are subject to evaluation.
- The RFI evaluations may fulfill all or a portion of the Provider's annual onsite QA requirement.

Item 17

- Requirement
 - Significant non-compliance reported to RESNET.
- How implemented
 - Include process/procedure in Policies & Procedure Manual
 - If an issue arises, contact RESNET.

Item 18

- Requirement
 - Primary QA Designee is named, documentation that all QA Designees meet requirements of 905.2.1-4 and 905.3.2 as verified by a QA Designee, and QA of a QA Designee's ratings (where applicable) meets 904.1.
- How implemented
 - Track in the Rater Registry
 - Include process/procedure in Policies & Procedure Manual

Item 19

- Requirement
 - All QA Designees meet ongoing Professional Development requirements.
- How implemented
 - Include process/procedure in Policies & Procedure Manual
 - Required to be documented in the QAD renewal application
 - Only QADs that have renewed for 2014 will be on the drop down menu on the online checklist
 - Confirm QADs are listed on the RESNET site
<http://www.resnet.us/professional/programs/test>

Item 20

- Requirement
 - All signed QA Designee agreements.
- How implemented
 - Include process/procedure in Policies & Procedure Manual
 - Archive signed agreements

Item 21

- Requirement
 - QA Designee Delegates meet requirements of 905.8.1-2, and performance is evaluated by QA Designee in accordance with 905.9.3.
- How implemented
 - Track in the Rater Registry
 - Include process/procedure in Policies & Procedure Manual
 - QAD will list all QA Delegates on online checklist

Item 22

- Requirement
 - QA record for each home is maintained in accordance with 905.9.8.1-3.
- How implemented
 - Include process/procedure in Policies & Procedure Manual
 - Track in Rater Registry
 - Archive building files and Field Review reports

Item 23

- Requirement
 - Rating data files for EEP qualified homes are maintained in accordance with 906.2 and subject to quality assurance review in accordance with 906.4 and 904.4.
- How implemented
 - Include process/procedure in Policies & Procedure Manual
 - Include in Rater Registry
 - Archive applicable EEP documentation

Item 24

- Requirement
 - Sampling Providers: Confirm compliance with Quality Assurance provisions specific to sampling, particularly but not limited to 603.9.1 related to compliance with the sampling process outlined in 603.1-8.

ANSI/RESNET 301-2014

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



March 7, 2014

Published by:

Residential Energy Services Network, Inc.

P.O. Box 4561

Oceanside, CA 92052-4561

<http://resnet.us/>

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minimum, this statement shall also include the Rating Provider's mailing address and phone number.

5.1.4. Rating Types. There shall be three Rating Types in accordance with Sections 5.1.4.1 through 5.1.4.3.

5.1.4.1. Confirmed Rating. A Rating Type that encompasses one individual dwelling or dwelling unit and is conducted in accordance with Sections 5.1.4.1.1 through 5.1.4.1.3.

5.1.4.1.1. All Minimum Rated Features of the Rated Home shall be field-verified through inspection and testing in accordance with Section 4.4.

5.1.4.1.2. All field-verified Minimum Rated Features of the Rated Home shall be entered into the Approved Software Rating Tool that generates the Home Energy Rating. The Home Energy Rating shall report the HERS Index that comports with these inputs.

5.1.4.1.3. Confirmed Ratings shall be subjected to the Quality Assurance requirements such as or equivalent to Section 900 of the *Mortgage Industry National Home Energy Rating Systems Standard*.

5.1.4.2. Sampled Ratings. A Rating Type that encompasses a set of dwellings or dwelling units and is conducted in accordance with Sections 5.1.4.2.1 through 5.1.4.2.3.

5.1.4.2.1. For the set of Rated Homes, all Minimum Rated Features shall be field-verified through inspection and testing of a single home in the set, or distributed across multiple homes in the set, in accordance with requirements such as or equivalent to Section 600 of the *Mortgage Industry National Home Energy Rating Systems Standard*.

5.1.4.2.2. The threshold specifications from the Worst-Case Analysis for the Minimum Rated Features of the set of Rated Homes shall be entered into the Approved Software Rating Tool that generates the Home Energy Rating. The Home Energy Rating shall report the HERS Index that comports with these inputs.

5.1.4.2.3. Sampled Ratings shall be subjected to the Quality Assurance requirements such as or equivalent to Section 900 of the *Mortgage Industry National Home Energy Rating Systems Standard*.

5.1.4.3. Projected Ratings. A Rating Type that encompasses one individual dwelling or dwelling unit and is conducted in accordance with Sections 5.1.4.3.1 through 5.1.4.3.5.

5.1.4.3.1. All minimum Rated Features of the Rated Home shall be determined from architectural drawings, threshold specifications, and the planned location and orientation for a new home or from a site audit and threshold specifications for an existing home that is to be improved. For a new home, if the proposed orientation is unknown, the home shall be analyzed facing each of the four cardinal directions (i.e.,

North, South, East and West) and the orientation resulting in the largest HERS Index shall be used.

5.1.4.3.2. Projected Ratings shall use either the envelope leakage rate specified as the required performance by the construction documents, the site-measured envelope leakage rate, or the air exchange rate specified for the HERS Reference home in Table 4.2.2(1).

5.1.4.3.3. Projected Ratings shall use either the distribution system efficiency specified as the required performance by the construction documents, the site-measured distribution system efficiency, or the thermal distribution system efficiency value specified for the HERS Reference home in Table 4.2.2(1).

5.1.4.3.4. The Minimum Rated Features of Rated Homes that were determined in Section 5.1.4.3.1 through 5.1.4.3.3 shall be entered into the Approved Software Rating Tool that generates the Home Energy Rating. The Home Energy Rating shall report the HERS Index that comports with these inputs.

5.1.4.3.5. Projected Rating Reports shall contain the following text in no less than 14 point font at the top of the first page of the report: “Projected Rating Based on Plans – Field Confirmation Required.”

5.2. Innovative Design Requests.

5.2.1. Petition. HERS providers can petition RESNET²⁴ for adjustment to the HERS Index for a Rated Home with features or technologies not addressed by Approved Software Rating Tools and/or this Standard. Innovative Design Requests (IDRs) to RESNET shall include, at a minimum, the following:

5.2.1.1. A Rating generated from Approved Software Rating Tool for Rated Home without feature(s) that cannot be modeled in the software tool.

5.2.1.2. Written description of feature(s) not included in Rating generated from software.

5.2.1.3. Manufacturer’s technical and/or performance specifications for feature(s) not included in the Rating generated from the Approved Software Rating Tool.

5.2.1.4. Estimated energy impact. Calculations or simulation results estimating the energy impact of feature(s) not included in the Rating generated from an Approved Software Rating Tool and documentation to support the calculation methodology and/or describe the modeling approach used.

²⁴ (Informative Note) Residential Energy Services Network, Inc., P.O. Box 4561, Oceanside, CA 92052-4561. <http://www.resnet.us>

Street Address	City			
State	ZIP			
Date Rated	Date Reviewed			
Date Approved	Upload Date			
Rating ID	ENERGY STAR®?	Yes	No	
Rating Company	Builder			
Rater	Field Inspector			
Quality Assurance Provider	QAD/QADD			

Element	No	Yes	N/A	Notes
Does this address have a duplicate in the Registry?				
Is the ZIP Code correct for the address?				
Does the Rater match the RTIN?				
Does the Provider match the Provider ID?				
Did the Rater provide a signed Standard Disclosure Form?				
Is the envelope ceiling area \geq the envelope floor area?				
If the envelope ceiling area is $>$ envelope floor area, did the Rater indicate any vaulted or sloped ceilings?				
Divide the conditioned volume of the home by the conditioned floor area. Is the result (average ceiling height) reasonable and match the site data collected?				
Multiply the foundation perimeter by the number of stories. Divide the above grade wall area by that result to get the approximate wall height. Is this value reasonable and close to the average ceiling height calculated previously?				
If vaulted or sloped ceilings are in the simulation file, subtract the flat ceiling area from the envelope floor area. Divide the sloped/vaulted ceiling area by that result to determine the slope ratio. Is that ratio reasonable?				
Do the number of bedrooms match the site data collected?				
Does the foundation type and area/length match the site data collected?				

Element	No	Yes	N/A	Notes
Does the framed floor area and type match the site data collected?				
Does the insulation value for the framed floor match the site data collected?				
Does the above grade wall area type and area match the site data collected?				
Does the insulation value and type for the above grade wall match the site data collected?				
Does the below grade wall area type and area match the site data collected?				
Does the insulation value and type for the below grade wall match the site data collected?				
Do the window performance values match the site data collected?				
Do the window areas match the site data collected?				
Do the window overhangs match the site data collected?				
Do the window orientations match the site data collected?				
Do the door types, areas, and locations match the site data collected?				
Does the ceiling type match the site data collected?				
Does the insulation value(s) for the ceiling types match the site data collected?				
Is a radiant barrier installed?				
Is a radiant barrier reasonable for the ceiling/attic type?				
Flat ceiling area matches site data collected?				
Vaulted/sloped ceiling area matches site data collected?				
Encapsulated attic ceiling area matches site data collected?				
Does the heating system size, type, and location match the site data collected?				
Does the heating equipment efficiency match the AHRI certificate values or documented OEM data?				
Does the cooling system size, type, and location match the site data collected?				

Element	No	Yes	N/A	Notes
Does the cooling system equipment efficiency match AHRI or documented OEM data?				
If geothermal systems are installed, did the Rater account for the pump energy?				
Does the water heating system size, type, efficiency and location match the site data collected?				
Did the Rater indicate in the simulation file mechanical ventilation was installed?				
According to the site data collected, what type of mechanical ventilation system was installed?				
Does the mechanical ventilation system in the simulation file match the site data collected?				
Does the fan wattage in the simulation file match the site data collected?				
Does the measured ventilation rate in the simulation file match the site data collected?				
Is there an indication of how the Rater measured the ventilation rate?				
Does the duct system location match the HVAC system location and the site data collected?				
Are the duct leakage test results entered in CFM25 & match the site data collected?				
Is the blower door test result entered in CFM50 & match the site data collected?				
Does the refrigerator match the site data collected or RESNET default?				
Does the dishwasher match the site data collected or RESNET default?				
Do the lighting percentages match the site data collected?				
Does the ceiling fan CFM/watt match the site data collected?				
Does the clothes washer LER match the site data collected?				
Does the clothes dryer EF match the site data collected?				
Are there any indications in the site data collected that cause questions regarding the simulation file?				

Field QA of Equipment Condition and Calibration

Equipment	Excellent	Good	Fair	Poor
Blower door fan housing				
Blower door frame				
Blower door fabric				
Duct pressurization fan housing				
Flexible air connector				
Reference hoses				
Blower door gauge				
Duct testing gauge				

Gauge Calibration	Last Date Calibrated	Within last year?	
Gauge Serial Number		Yes	No

Mortgage Industry National Home Energy Rating Systems Standards – Advisory Version

*This document is a working copy of the 2012 Standards that
incorporate all amendments adopted as of January 1, 2014*

*The official copy of the Standards are posted at
[http://www.resnet.us/standards/RESNET_Mortgage_Industry_National
_HERS_Standards.pdf](http://www.resnet.us/standards/RESNET_Mortgage_Industry_National_HERS_Standards.pdf)*

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www.resnet.us

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Chapter Six

RESNET Standards

600 RESNET NATIONAL STANDARD FOR SAMPLED RATINGS

601 GENERAL PROVISIONS

601.1 Purpose

Sampling is intended to provide certification that a group of new homes meets a particular threshold such as ENERGY STAR®, energy code compliance, or qualification for an energy efficiency lending program. It is based on pre-analysis of building plans meeting the intended qualification (e.g. a HERS Index threshold), and subsequent random testing and inspections of a sample set of the homes as-built. Certifying a group of homes by sampling entitles the customer to documentation certifying that the homes meet the desired threshold; it does not constitute a confirmed HERS rating on any home.

601.2 Scope

This chapter sets out the procedures for the accreditation of Sampling Providers. Accredited Sampling Providers shall assume all warranties and liabilities associated with the sampling of homes. RESNET does not provide any warranty, either explicit or implied, that sampled homes will meet or exceed the threshold specifications for the sample set. There may be instances in which state laws or regulations differ from these Standards. In such instances, state law or regulation shall take precedence over this standard.

602 DEFINITIONS AND ACRONYMS

See Appendix B.

603 TECHNICAL REQUIREMENTS FOR SAMPLING

603.1 Compliance Requirements

The testing and inspection of homes for minimum rated features shall be conducted in compliance with the procedures for conducting home energy ratings contained in this Standard.

603.2 Homes Eligible to be Sampled

The homes being sampled shall be of the same construction type using the same envelope systems.

603.3 Analysis of Homes

A Worst-Case Analysis shall be performed on each home plan in the sample set. If an option or change in the design of the structure is made that differs from those used in the initial analysis in a way that would require more stringent threshold specifications, then

that home must be individually rated. At a minimum, a certified Rater shall oversee this process.

603.4 Labeling of Homes

603.4.1 Every home within a given sample set shall be assigned the HERS Index Score as determined by the worst-case analysis and threshold specification for the floor plan for that home.

603.4.2 Every home subjected to this sampling Standard shall be provided with a label in accordance with Section 303.3 of these standards, which contains the following statement: “This home has been certified using a sampling protocol in accordance with Chapter 6 of the RESNET Standards (see www.resnet.us). This label shall be located on the electrical panel and the font shall be a minimum of 10 points.

603.5 Sample Set of Homes

Sampling controls may be applied to any sample set of homes within the same subdivision, community or metropolitan area and climate zone (as specified in the most current edition of the IECC), provided the criteria in Item 603.2 are met and:

603.5.1 Each sample set is made up of homes at the same stage of construction (e.g. pre-drywall, final);

603.5.2 For each stage of construction, each sample set will be composed of homes eligible for the applicable sampling controls within a 30 calendar day period. For example: a sample set that is defined for a pre-drywall inspection must include homes that are eligible for that pre-drywall inspection within a given 30-day period. If fewer than seven (7) homes are available for that phase of inspection, the sample set must be cut off at the number of homes that are available within that 30-day period. This sample set need not be carried through to final inspection; in fact, a whole new sample set may be defined for the final inspection phase based on the homes available for that phase within a new, 30-day period applied to that phase of tests and inspections.

603.5.3 Each home subject to sampling is required to be part of an identified set of sampling controls for each test or inspection that is sampled;

603.5.4 Each participating subdivision within a metropolitan area is subject to sampling controls on at least one home in any 90 calendar day period;

603.5.5 Each participating subdivision within a metropolitan area must start a minimum of one home in any 90 calendar day period.

603.6 Application of Sampling

The application of the sampling controls in this standard are only required for those tests and inspections that are not conducted on every home. Sampling controls shall be conducted for any tests and inspections not conducted on every home, according to the field testing and inspection requirements of 303.6.2.

603.7 Sampling Controls

603.7.1 A complete set of Sampling Controls shall be performed at a minimum ratio of one (1) test or inspection per seven (7) homes within a given sample set. At a minimum, a certified Rater shall oversee this process.

603.7.2 Sampling Providers may complete the sampling controls collectively on a single home or distribute the tests and inspections across several homes within a given sample set, provided the total number of individual tests and inspections meets or exceeds the minimum ratio set forth in 603.7.1.

603.7.3 To qualify for sampling in a metropolitan area, a builder shall first complete, without any incidence of failure, a complete set of sampling controls on at least seven (7) consecutive homes in that metropolitan area. For this initial phase of testing and inspections, the complete set of sampling controls shall be performed on each of the seven (7) homes.

603.7.3.1. For each newly started subdivision, sampling may begin for each sampling control only after three (3) of a particular sampling control passes consecutively without any incidence of failure.

603.7.4 Having successfully met the requirements of 603.7.3, a Sampling Provider may complete sampling controls for a builder indefinitely until a “failure” occurs or any of the criteria set forth in 603.2 are no longer met.

603.7.5 A complete set of sampling controls, whether performed on a single home or spread across several homes, must be completed whether or not one or more failure(s) are found.

603.7.6 When an “initial failure” occurs, the failed item(s) shall be tested or inspected in two (2) additional homes selected from the same sample set. Testing and/or inspections for any item(s) that may become inaccessible during the construction process, (e.g. wall insulation) must be timed so additional testing and/or inspections can occur on other homes in the sample set before they become inaccessible for inspection or testing.

603.7.7 When an “additional failure” occurs, in one or more of the two (2) additional homes, the failed item(s) shall be tested or inspected in the remaining four (4) homes selected for the same sample set.

603.7.8 Until the failure is corrected in all identified (failed) homes in the sample set, none of the homes shall be deemed to meet the threshold or labeling criteria.

603.8 Multiple “Additional Failures”

Action is required if three (3) “additional failures” occur within a ninety (90) calendar day period. The required action depends on whether those “additional failures” apply to the same failed item or various failed items.

603.8.1 If the multiple “additional failures” all apply to the same failed item, the builder shall submit to 100% inspection of that failed item, for a minimum of seven (7) homes, before resuming sampling of that item. Remaining unrelated sampling controls may be conducted on a sampled basis throughout this process.

603.8.2 If the multiple “additional failures” apply to various failed items, or additional failed items are found during testing and inspection of additional homes, the builder must begin again and complete 603.7.3 at a minimum, before continuing with sampling.

603.8.3 Exception: If a builder conducts a “root cause analysis” on an item or items covered under 603.8.1 or 603.8.2, and submits it in writing to the sampling Provider, sampling may resume as soon as the Provider deems that the solution has been implemented. The “root cause analysis” report shall contain at a minimum:

603.8.3.1 A written description of the problem(s) covered by the analysis;

603.8.3.2 A written explanation of the underlying reason(s) that the problem(s) occurred (e.g. inadequate training of subcontractor(s) or site supervisors, insufficient information or inadequate detail in the plans or specifications, etc);

603.8.3.3 A written description of a clearly defined process to correct the underlying cause(s);

603.8.3.4 A written description of when and how that process has been carried out;

603.8.3.5 A copy of the root cause analysis report shall be kept by the sampling Provider as part of the QA file, for a period of time of three (3) years, consistent with the requirements of 102.1.4.8.2.

603.9 Quality Assurance by Sampling Providers

603.9.1 The Sampling Provider’s Rating Quality Assurance Provider QA Designee shall be responsible for monitoring compliance with the sampling process and maintaining records in accordance with the requirements of Chapter 9.

604 RATING SAMPLING PROVIDER ACCREDITATION CRITERIA

604.1 Minimum Standards for Rating Sampling Provider (Sampling Provider)

Accreditation Sampling Providers shall be accredited in accordance with the Accreditation Process specified in Chapter 9 of these Standards. A Sampling Provider must specifically meet the following minimum standards for Accreditation.

604.1.1 All Sampling Providers shall be accredited by RESNET as a QA Provider in good standing and shall maintain their accreditation in good standing.

604.1.2 A Sampling Provider's accreditation must be renewed annually by RESNET.

604.1.3 In order to be eligible to be a Sampling Provider, the RESNET accredited QA Provider shall complete a minimum of twenty-five (25) confirmed ratings as an accredited QA Provider that have been documented to be accurate by the QA Provider's Quality Assurance Designee.

604.1.4 The Sampling Provider shall demonstrate to RESNET a minimum insurance coverage of \$1,000,000 in general liability coverage and \$1,000,000 in professional liability coverage.

604.1.5 Builders cannot use the sampling standard to certify or qualify homes in which they have a financial interest.

604.2 Responsibilities of Accredited Sampling Providers

604.2.1 Sampling Providers are responsible for ensuring that all of the Sampling inspections conducted and issued by their sampling program are in compliance with all of the criteria by which the system was accredited.

604.2.2 Sampling Providers are responsible for ensuring that the specifications for the minimum rated features for the sampled homes be communicated to the personnel or trades responsible for completing the work.

604.2.3 Minimum Standards For Sampling Provider's Operation Policies and Procedures must be written and provide for the following:

604.2.3.1 Field inspections and tracking of all homes in the sample set for verifying threshold technical specifications and tracking failures and re-inspections;

604.2.3.2 Blower Door Testing completed for sample sets in which the threshold specifications include credit for reduced air infiltration lower than the default value;

604.2.3.3 Duct testing completed for sample sets in which the threshold specifications include credit for reduced air distribution system leakage lower than the default value;

604.2.3.4 Sampling Inspector discipline procedures that include progressive discipline involving Probation - Suspension – Termination.



ENERGY STAR Certified Homes, Version 3 (Rev. 07)

Rater Quality Assurance Checklist

Home Address: _____		City: _____		State: _____		Zip Code: _____	
Action Items / Summary of QA				Yes		No	
If any Item marked "Must Correct," an action summary document shall be attached.				<input type="checkbox"/>		<input type="checkbox"/>	
Thermal Enclosure System Rater Checklist							
2. Quality-Installed Insulation				Passed	Must Correct	Not Visible	N/A
2.1 Ceiling, wall, floor, and slab insulation levels shall comply with one of the following options:							
2.1.1 Meet or exceed 2009 IECC levels OR ;				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.2 Achieve $\leq 133\%$ of the total UA resulting from the U-factors in 2009 IECC Table 402.1.3, excluding fenestration and per guidance in Footnote 3d, AND home shall achieve $\leq 50\%$ of the infiltration rate in Exhibit 1 of the National Program Requirements				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.2 All ceiling, wall, floor, and slab insulation shall achieve RESNET-defined Grade I installation or, alternatively, Grade II for surfaces that contain a layer of continuous, air impermeable insulation $\geq R-3$ in Climate Zones 1 to 4, $\geq R-5$ in Climate Zones 5 to 8				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Fully-Aligned Air Barriers							
3.1.3 Air barrier fully aligned with the insulation at insulated Attic knee walls. At exterior surface of walls in all climate zones; and also at interior surface of walls for Climate Zones 4-8				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Reduced Thermal Bridging							
4.1 For insulated ceilings with attic space above (i.e., non-cathedralized), Grade I insulation extends to the inside face of the exterior wall below at these levels: CZ 1-5: $\geq R-21$; CZ 6-8: $\geq R-30$				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.3 Insulation beneath attic platforms (e.g., HVAC platforms, walkways) $\geq R-21$ in CZ 1-5; $\geq R-30$ in CZ 6-8				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Air Sealing							
5.1 Penetrations to unconditioned space fully sealed with solid blocking or flashing as needed and gaps sealed with caulk or foam							
5.1.4 Bathroom and kitchen exhaust fans				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.1.5 Recessed lighting fixtures adjacent to unconditioned space ICAT labeled and fully gasketed. Also, if in insulated ceiling without attic above, exterior surface of fixture insulated to $\geq R-10$ in CZ 4 and higher to minimize condensation potential.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.1.6 Light tubes adjacent to unconditioned space include lens separating unconditioned and conditioned space and are fully gasketed				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.3 Other openings							
5.3.1 Doors adjacent to unconditioned space (e.g., attics, garages, basements) or ambient conditions made substantially air-tight with weatherstripping or equivalent gasket				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.3.2 Attic access panels and drop-down stairs equipped with a durable $\geq R-10$ insulated cover that is gasketed (i.e., not caulked) to produce continuous air seal when occupant is not accessing the attic				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.3.3 Whole-house fans equipped with a durable $\geq R-10$ insulated cover that is gasketed and either installed on the house side or mechanically operated				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC System Quality Installation Rater Checklist							
1. Review of HVAC System Quality Installation Contractor Checklist							
1.1 HVAC System Quality Installation Contractor Checklist completed in its entirety and collected for records, along with documentation on ventilation system (1.3), full load calculations (2.18), and AHRI certificate (3.13).				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2 Review the following parameters related to system cooling design, selection, and installation from the HVAC Contractor Checklist (Contractor Checklist Item # indicated in parenthesis):							
1.2.1 Outdoor design temperatures (2.4) are equal to the 1% and 99% ACCA Manual J design temperatures for contractor-designated design location				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.2 Home orientation (2.5) matches orientation of rated home				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.3 Number of occupants (2.6) equals number of occupants in rated home				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.4 Conditioned floor area (2.7) is within $\pm 10\%$ of conditioned floor area of rated home				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.5 Window area (2.8) is within $\pm 10\%$ of calculated window area of rated home				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.6 Predominant window SHGC (2.9) is within 0.1 of predominant value in rated home				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.7 Listed latent cooling capacity (3.8) exceeds design latent heat gain (2.12)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.8 Listed sensible cooling capacity (3.9) exceeds design sensible heat gain (2.13)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.9 Listed total cooling capacity (3.10) is 95-115% (or 95-125% for Heat Pumps in Climate Zones 4-8) of design total heat gain (2.14), or next nominal size				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.10 HVAC manufacturer and model numbers on installed equipment, Contractor Checklist (3.1, 3.2, 5.1), and AHRI certificate or OEM catalog data all match				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.11 Using reported liquid line (6.3) or suction line (6.5) pressure, corresponding temperature (as determined using pressure / temperature chart for refrigerant type) matches reported condenser (7.1) or evaporator (7.5) saturation temperature (± 3 degrees)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.12 Calculated subcooling (7.1 minus 6.4) value is within ± 3 °F of the reported target temperature (7.3) or calculated superheat (6.6 minus 7.5) value is within ± 5 °F of the reported target temperature (7.7)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.3 Rater-verified supply & return duct static pressure $\leq 110\%$ of contractor values (9.3, 9.4)				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.4 Contractor-prepared balancing report indicating the room name and design airflow for each supply and return register collected by Rater for records. In addition, final individual room airflows measured and documented on balancing report through one of the following options:							



ENERGY STAR Certified Homes, Version 3 (Rev. 07)

Rater Quality Assurance Checklist

1.4.1 Measured and documented by contractor (10.1.1), OR;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.4.2 Measured by Rater using Section 804.2 of the Mortgage Industry National HERS Standard, documented by Rater, & verified by Rater to be within the greater of $\pm 20\%$ or 25 CFM of design airflow (10.1.2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Duct Quality Installation - Applies to All Heating, Cooling, Ventilation, Exhaust, and Pressure Balancing Ducts	Passed	Must Correct	Not Visible	N/A
2.1 Connections and routing of ductwork completed without kinks or sharp bends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.2 No excessive coiled or looped flexible ductwork.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.4 Flexible ducts supported at intervals as recommended by mfr. but at a distance ≤ 5 ft.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.7 Quantity & location of supply and return duct terminals match contractor balancing report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.8 Bedrooms pressure-balanced using any combination of transfer grills, jump ducts, dedicated return ducts, and / or undercut doors to either: a) provide 1 sq. in. of free area opening per 1 CFM of supply air, as reported on the contractor-provided balancing report; or b) achieve a Rater-measured pressure differential ≤ 3 Pa with respect to the main body of the house when all bedroom doors are closed and all air handlers are operating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Duct Insulation - Applies to All Heating, Cooling, Supply Ventilation, and Pressure Balancing Ducts				
3.1 All connections to trunk ducts in unconditioned space are insulated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2 <i>Prescriptive Path:</i> Supply ducts in unconditioned attic have insulation $\geq R-8$ <i>Performance Path:</i> Supply ducts in unconditioned attic have insulation $\geq R-6$.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.3 All other supply ducts and all return ducts in unconditioned space have insulation $\geq R-6$.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Duct Leakage - Applies to All Heating, Cooling, and Balanced Ventilation Ducts				
4.1 Total Rater-measured duct leakage meets one of the following two options:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.1.1 <u>Rough-in:</u> ≤ 4 CFM25 per 100 sq. ft. of CFA with air handler and all ductwork, building cavities used as ductwork, & duct boots installed. In addition, <u>all</u> duct boots sealed to finished surface, Rater-verified at final.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.1.2 <u>Final:</u> ≤ 8 CFM25 per 100 sq. ft. of CFA with the air handler and all ductwork, building cavities used as ductwork, duct boots, & register grilles atop the finished surface (e.g., drywall, flooring) installed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2 Rater-measured duct leakage to outdoors ≤ 4 CFM25 per 100 sq. ft. of conditioned floor area.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Ventilation Air Inlets & Ventilation Source				
7.1 All ventilation air inlets located ≥ 10 ft. of stretched-string distance from known contamination sources such as stack, vent, exhaust hood, or vehicle exhaust. Exception: ventilation air inlets in the wall ≥ 3 ft. from dryer exhausts and contamination sources exiting through the roof.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.2 Ventilation air inlets ≥ 2 ft. above grade or roof deck in Climate Zones 1-3 or ≥ 4 ft. above grade or roof deck in Climate Zones 4-8 and not obstructed by snow, plantings, condensing units or other material at time of inspection.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.3 Ventilation air inlets provided with rodent / insect screen with ≤ 0.5 inch mesh.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.4 Ventilation air comes directly from outdoors, not from adjacent dwelling units, garages, crawlspaces, or attics.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Local Mechanical Exhaust				
In each kitchen and bathroom, a system shall be installed that exhausts directly to the outdoors and meets one of the following Rater-measured airflow standards:				
Location	Continuous Rate	Intermittent Rate		
8.1 Kitchen	≥ 5 ACH, based on kitchen volume	≥ 100 CFM and, if not integrated with range, also ≥ 5 ACH based on kitchen volume		
8.2 Bathroom	≥ 20 CFM	≥ 50 CFM		
8.5 Clothes dryers vented directly to outdoors, except for ventless dryers equipped with a condensate drain.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Combustion Appliances				
10.1 Furnaces, boilers, and water heaters located within the home's pressure boundary are mechanically drafted or direct-vented. As an exception, naturally drafted equipment is allowed in Climate Zones 1-3. For naturally drafted furnaces, boilers, and water heaters, the Rater has followed RESNET or BPI combustion safety test procedures and met the selected standard's limits for depressurization, spillage, draft pressure, and CO concentration in ambient air, as well as a CO concentration in the flue of ≤ 25 ppm.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.3 If unvented combustion appliances other than cooking ranges or ovens are located inside the home's pressure boundary, the Rater has operated the appliance for at least 10 minutes and verified that the ambient CO level does not exceed 35 ppm.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Filtration				
11.2 All return air and mechanically supplied outdoor air pass through filter prior to conditioning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.3 Filter located and installed so as to facilitate access and regular service by the owner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.4 Filter access panel includes gasket or comparable sealing mechanism and fits snugly against the exposed edge of filter when closed to prevent bypass.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

QA Designee: _____ Rater RTIN #: _____
Status of home at time of inspection (e.g., under construction, occupied) : _____ Date of Inspection: _____
Rater Company Name: _____
Rater Name: _____ Rater RTIN #: _____ Rater Pre-Drywall Inspection Date: _____
Rater Name: _____ Rater RTIN #: _____ Rater Final Inspection Date: _____

Note: Additional checklist items may be inspected for quality insurance and included in the additional checklist items report.



ENERGY STAR Certified Homes, Version 3 (Rev. 07)

Rater Quality Assurance Checklist

Additional Checklist Items Report

Additional Checklist Items - Use this space to list additional Items reviewed (attach additional pages, if needed)						
Checklist Name	Item #	Notes	Passed	Must Correct	Not Visible	N/A
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Setting the Standards for
Home Energy Efficiency

Draft RESNET Quality Assurance Procedures for Raters of ENERGY STAR Certified Homes

June 18, 2013

Background

RESNET Standards focus on home energy ratings, but also have provisions for third-party Energy Efficiency Programs (EEPs).

As an EEP, EPA's ENERGY STAR Certified Homes program relies on RESNET Home Energy Raters and Rating Providers to provide the independent, third-party verification needed for homes to earn the ENERGY STAR label.

The ENERGY STAR Certified Homes program contains requirements for homes that may not be covered under RESNET Standards, but require verification by RESNET Raters (such as the Thermal Enclosure Systems Rater checklist and HVAC System Quality Installation Rater checklist).

RESNET understands the ongoing value of the ENERGY STAR program to the marketplace and the RESNET community, and continues to work cooperatively with EPA on quality assurance.

EPA requested that RESNET convene a deliberative process to develop recommendations on the quality assurance provisions for ENERGY STAR certified homes that are not currently covered by RESNET's Quality Assurance (QA) process.

RESNET convened a task force composed of Steve Baden, Brett Dillon, Clinton Heyn, Mark Jansen and Daran Wastchak to develop this document. In addition, Jon Passe, Zachary Shadid, Dean Gamble, EPA, and Rick Gazica of ICF International provided input.

The proposed process for QA of Raters of ENERGY STAR certified homes is designed to require no additional home visits.

RESNET estimates that the additional QA for ENERGY STAR certified homes above the field QA already required by RESNET Standards will range from 60 minutes to 2 hours per home that is reviewed.

**Agreement Regarding Quality Assurance Requirements for the
ENERGY STAR Certified Homes Third-Party Energy Efficiency Program (EEP)**

1. Scope.

- 1.1. This document sets forth the *minimum* quality assurance requirements for Providers who oversee Raters certifying one or more ENERGY STAR certified homes during each RESNET quality assurance cycle.
- 1.2. Parties providing quality assurance, at their discretion, are permitted to conduct additional quality assurance related to ENERGY STAR program requirements beyond these minimum requirements. For example, a party is permitted, at their discretion, to schedule additional visits to a home selected for quality assurance to inspect additional elements that would not be visible after construction is complete. This practice is encouraged, but not required.

2. Selection of Parties Providing Quality Assurance.

- 2.1 Each Provider who oversees Raters certifying one or more ENERGY STAR certified homes during each RESNET quality assurance cycle shall designate a Quality Assurance Designee (QAD). This QAD shall complete the requirements in this Agreement. Per the RESNET standards, the Quality Assurance Designee may delegate work to a Quality Assurance Delegate.
- 2.2 The QAD selected by each Provider is permitted to be the same QAD that provides quality assurance services for RESNET rated homes.
- 2.3 The qualifications listed in Section 2.3.1 and 2.3.2 shall be met prior to a party being designated by a Provider as the QAD.
 1. The QAD shall meet the prerequisites defined in Section 905 of the 2006 Mortgage Industry National Home Energy Rating Systems Standards (RESNET Standards).
 2. The QAD shall have completed an ENERGY STAR Version 3 training offered by a RESNET-Accredited Training Provider.

3. Procedure for Review of Rating Data Files.

- 3.1 The QAD shall be responsible for an annual rating data file review of the greater of one (1) home or ten percent (10%) of each Rater's annual total of ENERGY STAR certified homes. When determining the number of rating data files to review for a Rater, round up to the next whole number when the percentage calculation yields a decimal point (e.g., 101 homes x 10% = 10.1, which means that 11 rating data files shall be reviewed).
- 3.2 Homes that are selected for RESNET Quality Assurance reviews are permitted to also be reviewed for compliance with the requirements in this section, as long as the homes are ENERGY STAR certified.

Alternatively, rating data files shall be selected from the pool of ENERGY STAR certified home files available at the time of the review for each Rater. The pool is permitted to be narrowed prior to the selection of homes to represent a particular area of interest, such as the stage of construction, geographic location, or builder. A

nonbiased selection process shall then be applied, such as random selection. Special effort should be taken to make certain that the selected files are as representative as possible of the homes being rated which, in some instances, may require more than the minimum (1) home or ten percent (10%).

3.3 Unless required by a Providers own Quality Assurance process the Rater shall only be required to submit rating data files for the homes selected by the QAD for quality assurance, rather than submit files for all ENERGY STAR certified homes.

3.4 The rating data file review for each selected ENERGY STAR Certified Home shall be completed by a QAD and consist of, at a minimum, the following:

3.4.1. For a home certified using the Performance Path, verify that the rating data file is in compliance with RESNET's requirements in Section 904 of the RESNET Standards.

3.4.2. For a home certified using the Prescriptive Path, verify that the field-verified Minimum Rated Features and field-verified threshold specifications meet or exceed the ENERGY STAR Reference Design defined in Exhibit 1 of the ENERGY STAR Qualified Homes, Version 3, National Program Requirements.

3.4.3. For a home certified using either Path, verify that the rating file contains the following four mandatory ENERGY STAR inspection checklists:

Thermal Enclosure System Rater Checklist,

HVAC System QI Rater Checklist,

HVAC System QI Contractor Checklist, and,

Water Management System Builder Checklist (or Indoor airPLUS Verification Checklist).

For each checklist, the QAD shall verify that each Checklist Item has been marked as "Builder Verified, " "Contractor Verified, " "Rater Verified, " or "N/A."

3.5 For a home certified using either Path, confirm that the rating data file, as defined in the RESNET standards, is maintained by the Rater for a minimum of 3 years and includes the ENERGY STAR Checklists.

3.6 Non-compliance with Section 3.4 shall trigger corrective action per Section 5.

4. Procedure for On-Site Verification of Ratings.

4.1 The QAD shall be responsible for an annual onsite field evaluation of the greater of one (1) home or one percent (1%) of each Rater's annual total of ENERGY STAR certified homes. When determining the number of onsite evaluations to complete for a Rater, round up to the next whole number when the percentage calculation yields a decimal point (e.g., 101 homes x 1% = 1.01, which means that 2 onsite evaluations shall be completed).

4.2 Homes that are selected for RESNET Quality Assurance reviews are permitted to also be reviewed for compliance with the requirements in this section, as long as the homes are ENERGY STAR certified.

Alternatively, homes shall be selected from the pool of ENERGY STAR certified home files available at the time of the review for each Rater. The pool is permitted to be narrowed prior to the selection of homes to represent a particular area of interest, such as the stage of construction, geographic location, or builder. A nonbiased selection process shall then be applied, such as random selection.

If a Rater completes less than 100 ratings in a calendar year, meaning only one (1) home was required for On-Site QA for that calendar year, and the On-Site QA on the one home was completed on a non-ENERGY STAR home because, for example, ENERGY STAR certified homes were not available for QA at the time QA was performed, then QA must be performed on the next available ENERGY STAR certified Home in the subsequent calendar year.

The on-site verification for each ENERGY STAR Certified Home shall be completed by a QAD and consist of, at a minimum, the following:

- 4.2.1. For a home certified using the Performance Path, verify that the home is in compliance with RESNET's requirements in Section 904 of the RESNET Standards.
- 4.2.2. For a home certified using the Prescriptive Path, independently verify the ENERGY STAR Reference Design features and benchmark home size to determine whether the ENERGY STAR certification was accurately completed by the Rater.
- 4.2.3. For homes certified using either Path, inspect the home to independently verify that the intent of all visible Items on the ENERGY STAR Certified Home Quality Assurance Checklist in Appendix A have been met.

4.3 Non-compliance with Section 4.2 shall trigger corrective action per Section 5.

5. Procedure for Corrective Action.

- 5.1 Non-compliance related to Section 904 of the RESNET Standards shall trigger corrective action in accordance with that Standard.
- 5.2 Non-compliance related to the ENERGY STAR Certified Home Quality Assurance Checklist (including, but not limited to Builder verified identified items from the Thermal Enclosure System Rater checklist) shall trigger the following corrective action:
 - 5.2.1. The home shall be corrected to come into compliance with the ENERGY STAR program requirements under the supervision of the QAD within sixty (60) days of the QAD's inspection. If corrective action is not taken within the allowed timeframe, the following steps shall be taken:
 - 5.2.1.1. The QAD shall notify RESNET and provide the name of the Provider, Rater, home address, builder, and documentation of the deficiencies;
 - 5.2.1.2. RESNET shall review the documentation and determine if proper procedures were followed by the QAD and if the QAD's determination was reached in accordance with RESNET's Standards and with this agreement;

- 5.2.1.3. If the QAD's determination is confirmed, RESNET will provide a signed statement and supporting documentation to EPA that the home(s) does not meet the ENERGY STAR program requirements.
- 5.2.1.4. EPA will review the documentation and determine appropriate action, including but not limited to revoking the ENERGY STAR certification of the home and revoking the partnership agreement of the builder and/or Rater.
- 5.2.2. The QAD shall develop and implement a corrective action plan for the Rater of the rating that addresses any underlying problems that led to the non-compliant ENERGY STAR certification, including but not limited to builder verified items from the TERSC.
- 5.2.3. The Provider shall initiate appropriate disciplinary action on the Rater in accordance with the Provider's written Rater disciplinary procedures.
- 5.2.4. Multiple instances of non-compliance shall, at a minimum, trigger an increased rate of file reviews or onsite inspections of homes and additional appropriate disciplinary action in accordance with the Provider's written Rater disciplinary procedures.

6. Record Keeping and Annual Submission.

- 6.1 Providers are responsible for completing an annual submission of QA results to RESNET. This submission shall include the following documentation for each ENERGY STAR certified home that was reviewed as part of this Agreement:
 - 6.1.1. The house address, Rater name, builder name, and HVAC contractor name.
 - 6.1.2. The quality assurance findings, including any corrective action plans.

7. Effective Date.

- 7.1 The requirements defined within this agreement shall be enforced beginning August 1, 2013

Appendix A: ENERGY STAR Certified Home Quality Assurance Checklist

Instructions:

- All mandatory QA checklist items that are accessible and visible outside the home, inside the home, attic, crawl space, or basement at the time of QA visit must be inspected.
- Any mandatory QA checklist items that are not accessible or visible at the time of QA visit must be noted as such with a description of the circumstances.
- QA Designees are expected to use their experience and discretion to verify that the overall intent of each inspection checklist item has been met (i.e., identifying major defects that undermine the intent of the checklist item versus identifying minor defects that the QA Designee may deem acceptable).



ENERGY STAR Certified Homes, Version 3 (Rev. 06) Rater Quality Assurance Checklist

Home Address: _____		City: _____		State: _____	
Action Items / Summary of QA			Yes	No	
If any Item marked "Must Correct," an action summary document shall be attached.			<input type="checkbox"/>	<input type="checkbox"/>	
Thermal Enclosure System Rater Checklist					
2. Quality-Installed Insulation			Passed	Must Correct	Not Visible
2.1 Ceiling, wall, floor, and slab insulation levels shall comply with one of the following options:					
2.1.1 Meet or exceed 2009 IECC levels OR ;			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.2 Achieve $\leq 133\%$ of the total UA resulting from the U-factors in 2009 IECC Table 402.1.3, excluding fenestration and per guidance in Footnote 3d, AND home shall achieve $\leq 50\%$ of the infiltration rate in Exhibit 1 of the National Program Requirements			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.2 All ceiling, wall, floor, and slab insulation shall achieve RESNET-defined Grade I installation or, alternatively, Grade II for surfaces that contain a layer of continuous, air impermeable insulation $\geq R-3$ in Climate Zones 1 to 4, $\geq R-5$ in Climate Zones 5 to 8			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Fully-Aligned Air Barriers					
3.1.3 Air barrier fully aligned with the insulation at insulated Attic knee walls. At exterior surface of walls in all climate zones; and also at interior surface of walls for Climate Zones 4-8			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Reduced Thermal Bridging					
4.1 For insulated ceilings with attic space above (i.e., non-cathedralized), Grade I insulation extends to the inside face of the exterior wall below at these levels: CZ 1-5: $\geq R-21$; CZ 6-8: $\geq R-30$			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.3 Insulation beneath attic platforms (e.g., HVAC platforms, walkways) $\geq R-21$ in CZ 1-5; $\geq R-30$ in CZ 6-8			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Air Sealing					
5.1 Penetrations to unconditioned space fully sealed with solid blocking or flashing as needed and gaps sealed with caulk or foam					
5.1.4 Bathroom and kitchen exhaust fans			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.1.5 Recessed lighting fixtures adjacent to unconditioned space ICAT labeled and fully gasketed. Also, if in insulated ceiling without attic above, exterior surface of fixture insulated to $\geq R-10$ in CZ 4 and higher to minimize condensation potential.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.1.6 Light tubes adjacent to unconditioned space include lens separating unconditioned and conditioned space and are fully gasketed			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.3 Other openings					

5.3.1 Doors adjacent to unconditioned space (e.g., attics, garages, basements) or ambient conditions gasketed or made substantially air-tight	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.3.2 Attic access panels and drop-down stairs equipped with a durable \geq R-10 insulated cover that is gasketed (i.e., not caulked) to produce continuous air seal when occupant is not accessing the attic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.3.3 Whole-house fans equipped with a durable \geq R-10 insulated cover that is gasketed and either installed on the house side or mechanically operated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC System Quality Installation Rater Checklist				
1. Review of HVAC System Quality Installation Contractor Checklist				
1.1 HVAC System Quality Installation Contractor Checklist completed in its entirety and collected for records, along with documentation on ventilation system (1.3), full load calculations (2.18), and AHRI certificate (3.13).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2 Review the following parameters related to system cooling design, selection, and installation from the HVAC Contractor Checklist (Contractor Checklist Item # indicated in parenthesis):				
1.2.1 Outdoor design temperatures (2.4) are equal to the 1% and 99% ACCA Manual J design temperatures for contractor-designated design location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.2 Home orientation (2.5) matches orientation of rated home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.3 Number of occupants (2.6) equals number of occupants in rated home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.4 Conditioned floor area (2.7) is within $\pm 10\%$ of conditioned floor area of rated home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.5 Window area (2.8) is within $\pm 10\%$ of calculated window area of rated home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.6 Predominant window SHGC (2.9) is within 0.1 of predominant value in rated home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.7 Listed latent cooling capacity (3.8) exceeds design latent heat gain (2.12)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.8 Listed sensible cooling capacity (3.9) exceeds design sensible heat gain (2.13)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.9 Listed total cooling capacity (3.10) is 95-115% (or 95-125% for Heat Pumps in Climate Zones 4-8) of design total heat gain (2.14), or next nominal size	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.10 HVAC manufacturer and model numbers on installed equipment, Contractor Checklist (3.1, 3.2, 5.1), and AHRI certificate or OEM catalog data all match	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.11 Using reported liquid line (6.3) or suction line (6.5) pressure, corresponding temperature (as determined using pressure / temperature chart for refrigerant type) matches reported condenser (7.1) or evaporator (7.5) saturation temperature (± 3 degrees)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2.12 Calculated subcooling (7.1 minus 6.4) value is within ± 3 °F of the reported target temperature (7.3) or calculated superheat (6.6 minus 7.5) value is within ± 5 °F of the reported target temperature (7.7)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.3 Rater-verified supply & return duct static pressure $\leq 110\%$ of contractor values (9.3, 9.4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.4 Contractor-prepared balancing report indicating the room name and design airflow for each supply and return register collected by Rater for records. In addition, final individual room airflows measured and documented on balancing report through one of the following options:				
1.4.1 Measured and documented by contractor (10.1.1), OR;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.4.2 Measured by Rater using Section 804.2 of the Mortgage Industry National HERS Standard, documented by Rater, & verified by Rater to be within the greater of $\pm 20\%$ or 25 CFM of design airflow (10.1.2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Duct Quality Installation - Applies to All Heating, Cooling, Ventilation, Exhaust, and Pressure Balancing Ducts	Passed	Must Correct	Not Visible	N/A
2.1 Connections and routing of ductwork completed without kinks or sharp bends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.2 No excessive coiled or looped flexible ductwork.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.4 Flexible ducts supported at intervals as recommended by mfr. but at a distance ≤ 5 ft.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.7 Quantity & location of supply and return duct terminals match contractor balancing report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.8 Bedrooms pressure-balanced using any combination of transfer grills, jump ducts, dedicated return ducts, and / or undercut doors to either: a) provide 1 sq. in. of free area opening per 1 CFM of supply air, as reported on the contractor-provided balancing report; or b) achieve a Rater-measured pressure differential ≤ 3 Pa (0.012 in. w.c.) with respect to the main body of the house when all bedroom doors are closed and all air handlers are operating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Duct Insulation - Applies to All Heating, Cooling, Supply Ventilation, and Pressure Balancing Ducts				
3.1 All connections to trunk ducts in unconditioned space are insulated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2 <i>Prescriptive Path:</i> Supply ducts in unconditioned attic have insulation \geq R-8 <i>Performance Path:</i> Supply ducts in unconditioned attic have insulation \geq R-6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.3 All other supply ducts and all return ducts in unconditioned space have insulation \geq R-6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Duct Leakage - Applies to All Heating, Cooling, and Balanced Ventilation Ducts							
4.1 Total Rater-measured duct leakage ≤ 8 CFM25 per 100 sq. ft. of conditioned area.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2 Rater-measured duct leakage to outdoors ≤ 4 CFM25 per 100 sq. ft. of conditioned floor area.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Ventilation Air Inlets & Ventilation Source							
7.1 All ventilation air inlets located ≥ 10 ft. of stretched-string distance from known contamination sources such as stack, vent, exhaust hood, or vehicle exhaust. Exception: ventilation air inlets in the wall ≥ 3 ft. from dryer exhausts and contamination sources exiting through the roof.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.2 Ventilation air inlets ≥ 2 ft. above grade or roof deck in Climate Zones 1-3 or ≥ 4 ft. above grade or roof deck in Climate Zones 4-8 and not obstructed by snow, plantings, condensing units or other material at time of inspection.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.3 Ventilation air inlets provided with rodent / insect screen with ≤ 0.5 inch mesh.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.4 Ventilation air comes directly from outdoors, not from adjacent dwelling units, garages, crawlspaces, or attics.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Local Mechanical Exhaust							
In each kitchen and bathroom, a system shall be installed that exhausts directly to the outdoors and meets one of the following Rater-measured airflow standards:							
Location	Continuous Rate	Intermittent Rate					
8.1 Kitchen	≥ 5 ACH, based on kitchen volume	≥ 100 CFM and, if not integrated with range, also ≥ 5 ACH based on kitchen volume	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.2 Bathroom	≥ 20 CFM	≥ 50 CFM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.5 Clothes dryers vented directly to outdoors, except for ventless dryers equipped with a condensate drain.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Combustion Appliances							
10.1 Furnaces, boilers, and water heaters located within the home's pressure boundary are mechanically drafted or direct-vented. As an exception, naturally drafted equipment is allowed in Climate Zones 1-3. For naturally drafted furnaces, boilers, and water heaters, the Rater has followed RESNET or BPI combustion safety test procedures and met the selected standard's limits for depressurization, spillage, draft pressure, and CO concentration in ambient air, as well as a CO concentration in the flue of ≤ 25 ppm.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10.3 If unvented combustion appliances other than cooking ranges are located inside the home's pressure boundary, the Rater has operated the appliance for at least 10 minutes and verified that the ambient CO level does not exceed 35 ppm.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11. Filtration							
11.2 All return air and mechanically supplied outdoor air pass through filter prior to conditioning.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11.3 Filter located and installed so as to facilitate access and regular service by the owner.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11.4 Filter access panel includes gasket or comparable sealing mechanism and fits snugly against the exposed edge of filter when closed to prevent bypass.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Additional Checklist Items - Use this space to list additional Items reviewed (attach additional pages, if needed)							
Checklist Name	Item #	Notes					
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
QA Designee: _____							
Status of home at time of inspection (e.g., under construction, occupied): _____							
Rater RTIN #: _____				Date of Inspection: _____			
Rater Company Name: _____							
Rater Name: _____		Rater RTIN #: _____		Rater Pre-Drywall Inspection Date: _____			
Rater Name: _____		Rater RTIN #: _____		Rater Final Inspection Date: _____			