

2018 Instructor Round Table

Scott Doyle and Laurel Elam, RESNET

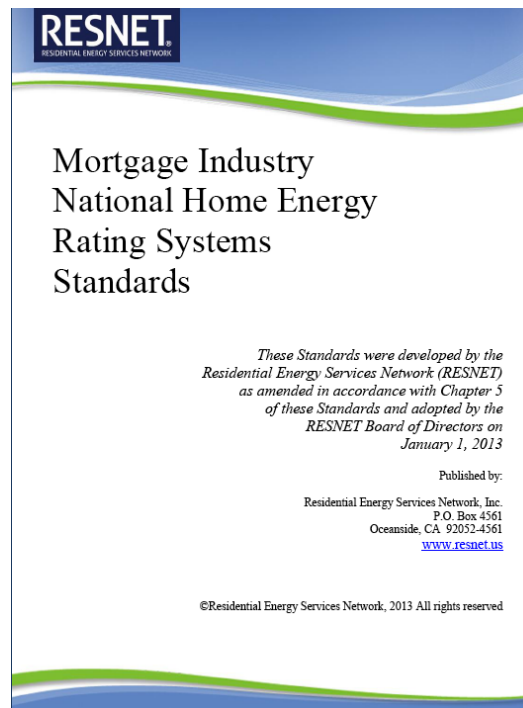


Presentation Agenda

- Brief Review of Ch 2 Amendments
- ANSI/RESNET Standard 380
- Exam Updates
- Upcoming Standard Changes
- Feedback Loop From RESNET QA
- Q&A

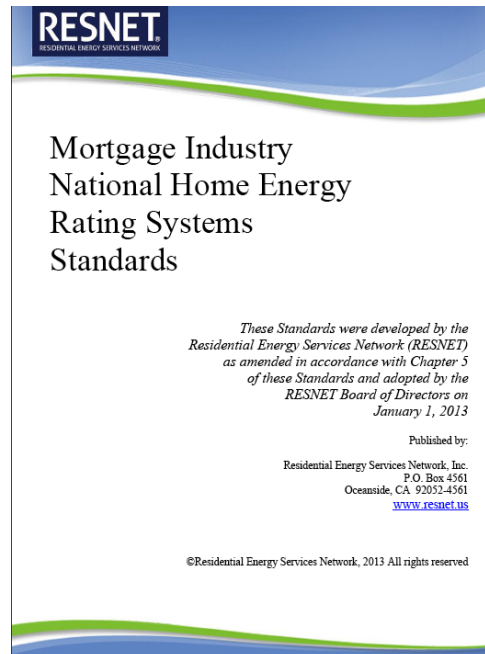
Review of Ch 2 Amendments

- Instructor and Rater Professional Development



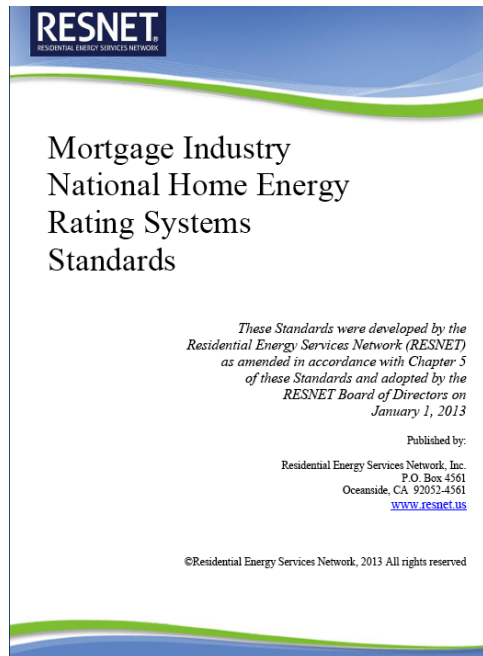
Review of Ch 2 Amendments

- Revised Categories for Rater Professional Development



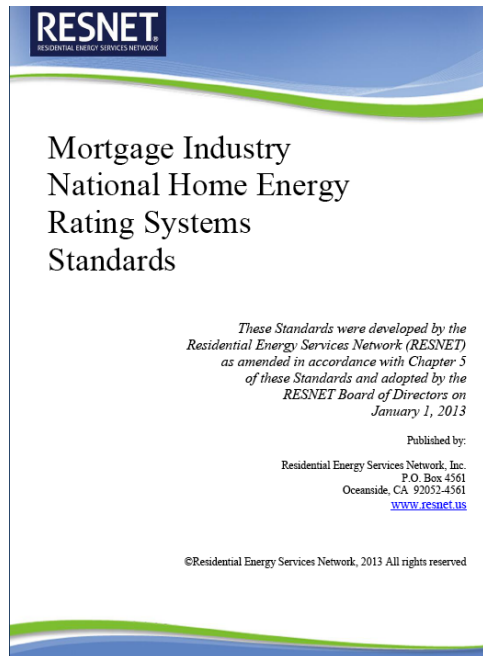
Review of Ch 2 Amendments

- Revised Categories for Instructor Professional Development



Review of Ch 2 Amendments

- Instructor and Rater Professional Development



Review of Ch 2 Amendments

- Class Rating Requirement Removed



ANSI/RESNET/ICC 380-2016

Standard for Testing Airtightness of Building Enclosures, Airtightness of Heating and Cooling Air Distribution Systems, and Airflow of Mechanical Ventilation Systems

February 4, 2016

Residential Energy Services Network, Inc.
P.O. Box 4561
Oceanside, CA 92052-4561
<http://resnet.us/>

International Code Council
500 New Jersey Avenue, NW, 6th Floor
Washington, D.C. 20001
www.iccsafe.org

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Contributors:
Dean Gamble
Bruce Harley
Gary Nelson
Dennis Stroer
Joe Medosch
Kristof Irwin
Pat Murphy
Warren Lupson
And the RESNET Standards
Development committee

ANSI/RESNET/ICC Standard 380

- **Infiltration Volume (IV):** This is the volume of concern for pollutants in the home. Used to convert air leakage in cfm to air exchange in ACH. Used for checking airtightness criteria. e.g., 3 ACH50 limit.
- **Conditioned Floor Area (CFA):** Used in SLA calculations and in MINHERS energy modeling to determine window area, mechanical ventilation sizing, internal gains/MELS, etc.

ANSI/RESNET/ICC Standard 380

	Conditioned Space Volume	Un-Conditioned Space Volume	Conditioned Floor Area	Infiltration Volume
Space conditioned to 68/78F	Yes		Yes	Yes
Attic air sealed & insulated at roof deck, and conditioned ¹	Yes			Yes
Attic air sealed & insulated at roof deck, but not conditioned		Yes		Yes
Attic not air sealed & insulated at roof deck		Yes		
Wall cavity, with at least one horizontally-adjacent space conditioned	Yes		Yes	Yes
Wall cavity, with both horizontally-adjacent spaces unconditioned		Yes		
Floor cavity, with volume above & below conditioned	Yes			Yes
Floor cavity, with either volume above or below unconditioned		Yes		Yes
Floor cavity, with both volume above and below unconditioned		Yes		
Unvented crawlspace, conditioned ¹	Yes			Sometimes ³
Unvented crawlspace, not conditioned		Yes		Sometimes ³
Vented crawlspace		Yes		
Basement, conditioned ²	Yes		Yes	Sometimes ³
All other basements		Yes		Sometimes ³
Garage, even if conditioned		Yes		
Thermally isolated sunroom		Yes		

- To be considered conditioned, the party conducting evaluations must obtain an ACCA Manual J, S, and either B or D report and verify that both the heating and cooling equipment and distribution system are designed to offset the entire design load of the volume.*
- To be considered conditioned, the party conducting evaluations must: obtain an ACCA Manual J, S, and either B or D report and verify that both the heating and cooling equipment and distribution system are designed to offset the entire design load of the volume; or verify through visual inspection that both the heating and cooling equipment and distribution system serve the volume and, in the judgement of the party conducting evaluations, are capable of maintaining the heating and cooling temperatures specified by the Thermostat section in Table 4.2.2(1) of ANSI/RESNET 301-2104.*
- Include attic, basement or crawl space in Infiltration Volume if the door(s) or hatch(es) between that space and Conditioned Space Volume are open during enclosure air leakage testing (Section 3.2.3, 3.2.4, and 3.2.5).*

ANSI/RESNET/ICC Standard 380

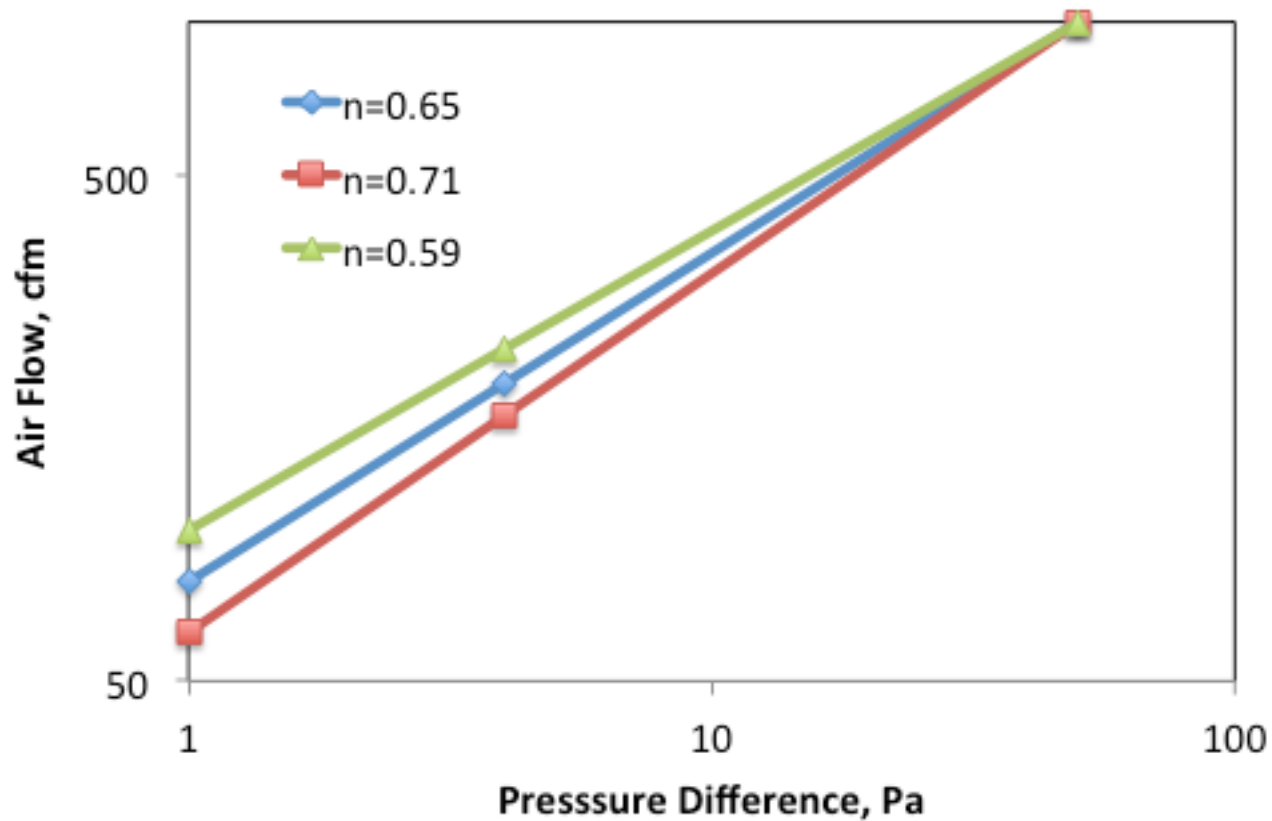


ANSI/RESNET/ICC Standard 380

- Multi point pressurization or depressurization of the building envelope from 10 (was 15) to 60 Pa
- House prep same as Chapter 8 (except pilot lights)
- Added requirement to close basement door if floor is sealed and insulated and have it open otherwise
- No multiple accuracy levels to be accounted for
- Test procedure changes
 - No post baseline pressure requirements
 - Reduce minimum number of pressure stations from 7 to 5
 - Altitude/density changes refer to ASTM E779 (Table 802.1 removed) and allow test equipment manufacturers software to be used



ANSI/RESNET/ICC Standard 380



ANSI/RESNET/ICC Standard 380

- Correction for Single-Point Extrapolation
- For retrofit energy savings, conducting an energy audit, or assessing the relative enclosure air leakage of a group of buildings, then no further corrections are made
- For a home energy rating or compliance with enclosure leakage limit we account for extrapolation to operating conditions:

$$\text{Adjusted CFM50} = 1.1 \times \text{CFM50}$$

$$\text{Adjusted ELA} = 1.1 \times \text{ELA}$$



ANSI/RESNET/ICC Standard 380

- Duct Leakage pressurization or depressurization to 25 Pa
 - Total duct leakage or
 - Leakage to outside by pressurizing or depressurizing the house to the same test pressure
- Test method A of ASTM E1554 (DeltaQ) – removed envelope leakage restrictions and includes specific language on combining separate supply and return leakage to get their sum
- Table 803.1 (duct leakage testing summary) removed together with reference to ASHRAE 152



ANSI/RESNET/ICC Standard 380

- Total Duct Leakage Changes:
 - A complete HVAC system is required for testing
 - You may remove registers atop carpets and seal the face of the duct boot
 - If there are no grilles installed you can seal the face of the duct boot
 - Cannot connect to return grille unless there are 3 or less returns and/or the total duct leakage is < 50 cfm, or local jurisdiction prevents connection to blower access
 - If there are ducts in UCSV any doors/hatches between UCSV and outside must be opened
 - Duct **target** pressure uncertainty changed from 25 ± 0.5 Pa to 25 ± 3 Pa



ANSI/RESNET/ICC Standard 380

- Airflow at inlet
 - Powered flow hood
 - Air flow resistance
 - **Added: Passive flow hood**
- Airflow at outlet
 - Powered flow hood
 - Bag inflation
- **Added: In-duct airflow**



ANSI/RESNET/ICC Standard 380

- Air Flow resistance increased allowed pressure difference between hood interior and room from 5 to 8 Pa
- Added Passive Flow hood:
 - Same procedure as Air Flow Resistance method



ANSI/RESNET/ICC Standard 380

- **New: In-Duct Air Flow**
- Can be an airflow measurement station (allowed uncertainty 10% or 5 cfm) or integrated diagnostic tool (allowed uncertainty 15% of highest ventilation flow)
- Requires air flow measurement station in duct + a manometer + measurement of duct cross sectional area
- Can be permanent or temporary installation
- Air flow derived from converting pressure to average air velocity, V (fpm), and multiplying by cross-sectional area, A (ft²):

$$\text{Airflow (CFM)} = V \times A$$



Setting the Standards for
Home Energy Efficiency

RESNET Exam Update

- Combined Written Exam Schedule

The screenshot displays the RESNET website interface. At the top left is the RESNET logo with the tagline "Setting the Standard for Quality". A navigation menu includes links for Home, Rater/Auditor Information, Contractor Information, Builder Information, Provider Information, Quality Assurance, RESNET Standards, RESNET Conference, Partners, Resources, and RESBlog. A secondary navigation bar shows the current path: Rater/Auditor Information > HERS Information > HERS Certification > Rater Test. The main content area is titled "HERS RATER TEST" and features a "RESNET National Rater Test" section. This section describes the test as a 50-question, on-line true/false/multiple choice exam with a two-hour limit and an 80% passing score. It also mentions a \$100.00 fee and a link to a directory of accredited rater training providers. Below this is a "Resources" section with links to a study guide, how to take the test, the rater inspector test, and how the test was developed. On the right side of the page, there are promotional banners: "Join RESNET Today" with a "JOIN NOW" button, "Already a MEMBER?" with a "LOGIN HERE" button, "STAY CONNECTED" with social media links for Facebook, Twitter, and LinkedIn, and "AUDITOR/RATER?" with a "READ MORE" button and a link to find out more about certification requirements and business opportunities.

RESNET Exam Update

- SIM Practical Updates



Upcoming Standard Changes

- Multifamily (Formerly 305)



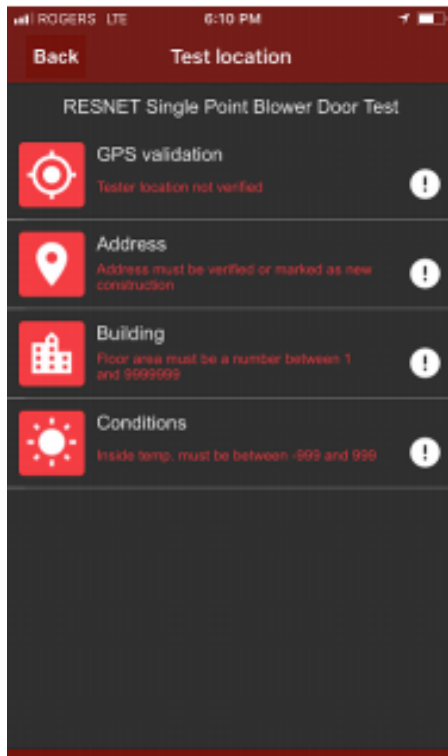
Upcoming Standard Changes

- HVAC Quality Installation



Feedback Loop: RESNET QA

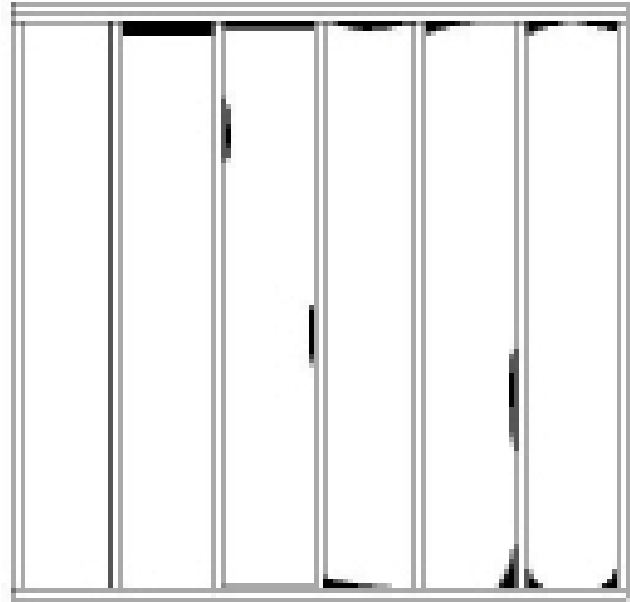
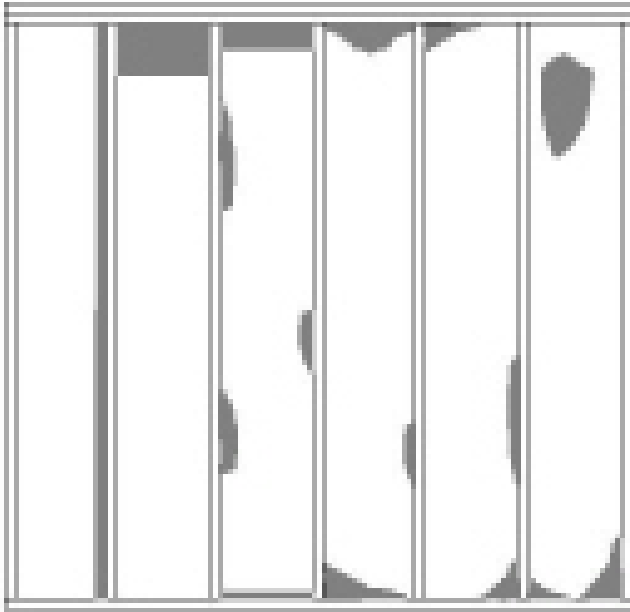
- Correction Factors



Setting the Standards for
Home Energy Efficiency

Feedback Loop: RESNET QA

- Insulation Grading



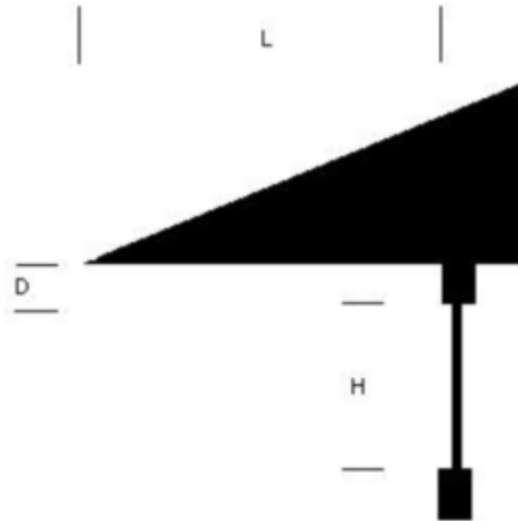
Feedback Loop: RESNET QA

- Insulation Grading



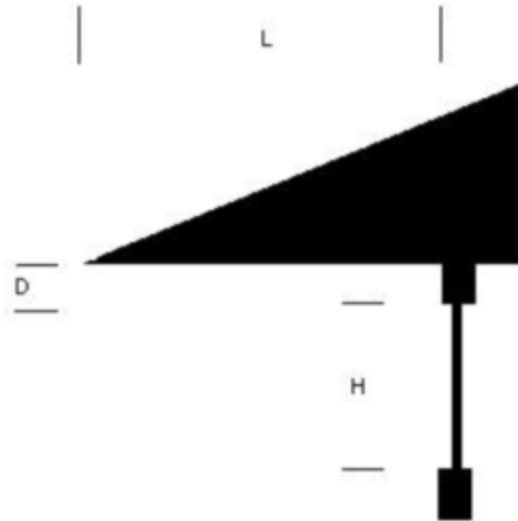
Feedback Loop: RESNET QA

- Window Overhangs



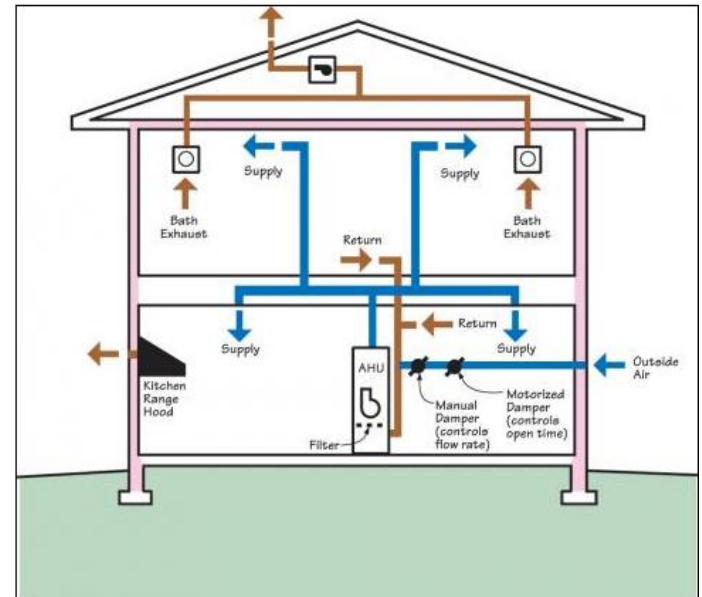
Feedback Loop: RESNET QA

- Window Overhangs



Feedback Loop: RESNET QA

- Ventilation Fan Watts



Questions?

Scott Doyle

scott@resnet.us

Laurel Elam

laurel@resnet.us



Setting the Standards for
Home Energy Efficiency