

DOCKETED

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2019 Building Energy Efficiency Standards

REESIDENTIAL APPENDIX RA

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2019 Building Energy Efficiency Standards

REESIDENTIAL APPENDIX RA

RA1 – Alternative Residential Field Verification and Diagnostic Test Protocols

RA2 – Residential HERS Verification, Testing, and Documentation Procedures

RA3 – Residential Field Verification and Diagnostic Test Protocols

RA4 – Eligibility Criteria for Energy Efficiency Measures



RA 2– Residential HERS Verification, Testing, and Documentation Procedures

RA2.2– Measures that Require Field Verification and Diagnostic Testing

Table 2-1– Summary of Measures Requiring Field Verification and Diagnostic Testing

- Modified Table to reflect the fact that quality insulation installation (QII) is now a prescriptive requirement and no longer a compliance credit
- Added the installation criteria of Drain water heat recovery



RA 2– RESIDENTIAL HERS VERIFICATION, TESTING, AND DOCUMENTATION PROCEDURES

RA2.4.3– Third Party Quality Control Program

RA2.7– Third Party Quality Control Program

Third Party Quality Control Program (TPQCP)

- Clarify and Update Specifications and Procedure



RA 3– Residential Field Verification and Diagnostic Test Protocols

RA3.4- Field Verification of Installed HVAC System Components and Devices

RA3.5– Quality Insulation Installation Procedure



RA3.3- Field Verification and Diagnostic Testing of Forced Air System Airflow Rate, Fan Watt Draw, and Determination of Fan Efficacy

RA 3.3.4– Verification of Central Fan Ventilation Cooling Systems (CFVCS)

Central Fan Ventilation Cooling System (CFVCS) Verification Procedure determines:

- The system airflow and fan efficacy at high fan speed as required for compliance with Standards Section 150.0(m)13.
- The system airflow rate and fan efficacy at the speed used for ventilation cooling as specified on the Certificate of Compliance for the CFVCS



RA3.4- FIELD VERIFICATION OF INSTALLED HVAC SYSTEM COMPONENTS AND DEVICES

RA 3.4.4.2– Rated Heat Pump Capacity Verification Procedure

Procedure consists of visual verification of:

- AHRI certification for the installed equipment manufacturer model numbers
- AHRI heating capacity at 47°F and 17°F



RA 3.5.2– DEFINITIONS

- Modified the definition for ‘Compression’
 - Clarified language and reduced the allowable compression to 30%
- Modified the definition for ‘Delaminated’
 - Clarified the intent to prevent voids or compression of the insulation
- Modified the definition for ‘Inset Stapling’
 - Clarified the intent to prevent voids between the insulation and the air barrier
- Inserted new definition for ‘Non-Standard Framing’



RA 3.5.3 – BATT AND BLANKET INSULATION

RA3.5.4 – LOOSE FILL INSULATION

- Clarified language
- Reorganized some content
 - Separated out Gable Ends from Kneewalls and Skylight Shafts
- Removed duplicate language
- Clarified window and door header insulation requirements for single-member headers that are the same width as the wall
- Added new section to address below deck insulation



RA3.5.5 – RIGID BOARD INSULATION

RA3.5.8 – INSULATED CONCRETE FORM (ICF)

- Clarified language
- Reorganized some content
 - Separated out Gable Ends from Kneewalls and Skylight Shafts
- Removed duplicate language



RA3.6–Field Verification of Water Heating Systems

RA3.6.5 HERS-Verified Compact Hot Water Distribution System Expanded Credit

- Section updated to reflect changes to the HERS verified requirement

RA3.6.9 HERS-Verified Drain Water Heat Recovery Systems

- New section describes the requirements for Drain Water Heat Recovery Systems



RA 3.7 – FIELD VERIFICATION AND DIAGNOSTIC TESTING OF MECHANICAL VENTILATION SYSTEMS

RA 3.7.4.3 – Kitchen Range Hood Verification

Procedure confirms:

- The manufacturer name and model number.
- The model is listed in the HVI Directory.
- The rated airflow value listed in the HVI directory complies with the airflow requirements specified in Standards Section 150.0(o)2B



RA 3.8 – FIELD VERIFICATION AND DIAGNOSTIC TESTING OF Building Air Leakage

Update Field Verification and Diagnostic Testing of Building Air Leakage

- Reference new version of the RESNET standard (ANSI/RESNET/ICC 380-2016)
- Change the protocol to limit the options to use of only the One-Point (Single-Point) test.



RA 3.9 – FIELD VERIFICATION AND DIAGNOSTIC TESTING OF WHOLE HOUSE FANS (WHF)

Whole House Fan (WHF) Airflow Rate and Fan Efficacy Verification

Note: HERS verification of WHF airflow rate and fan efficacy applicable only to the performance compliance approach

Airflow rate measurement using one of the following:

- pressure matching and fan flowmeter (blower door)
- Airflow rate measurement using powered flow capture hood
- Airflow rate measurement using traditional flow capture hood

Watt draw measurement and determination of WHF fan efficacy (W/cfm)



RA4.4–WATER HEATING MEASURES

RA4.4.3 Pipe Insulation Credit

- Section deleted due to mandatory pipe insulation requirement in the California Plumbing Code

RA4.4.6 Compact Hot Water Distribution System

- New section describes the requirements for the basic credit of Compact Hot Water Distribution System

RA4.4.16 HERS-Verified Compact Hot Water Distribution System Expanded Credit

- Section updated to reflect changes to the HERS verified requirements



RA4.4–Water Heating Measures

RA4.4.20 Solar Water Heating Systems

- Added International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T) as a listing agency

RA4.4.21 HERS-Verified Drain Water Heat Recovery Systems

- New section describe the requirements for Drain Water Heat Recovery Systems



KEY WEB-LINK

2019 Title 24 Utility-Sponsored Stakeholder

<http://title24stakeholders.com/>

Building Energy Efficiency Program

<http://www.energy.ca.gov/title24/>

Comments to be submitted to

<https://efiling.energy.ca.gov/EComment/EComment.aspx?docketnumber=17-BSTD-01>



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Questions/Comments

