

# **Just the Basics: HERS Verification**



# What's Included in This Fact Sheet?

The 2022 California Building Energy Efficiency Standards (Energy Code or Title 24, Part 6) requires that third-party special inspectors called Home Energy Rating System (HERS) Raters perform field verification and diagnostic testing of certain installed building features and systems. Because there is some crossover between residential and nonresidential construction practices in multifamily buildings, some of these verifications may be performed by a certified acceptance test technician, depending on the situation.

This fact sheet covers HERS verification and diagnostic testing required for multifamily buildings, which include low-rise (3 habitable stories or less) and high-rise (4 habitable stories or more) multifamily buildings including the dwelling units and the common use areas. This fact sheet covers New Construction, Additions, and Alterations.

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See our <u>2022 Nonresidential and Multifamily Buildings</u>
<u>Acceptance Testing Fact Sheet</u> for more information about acceptance testing.

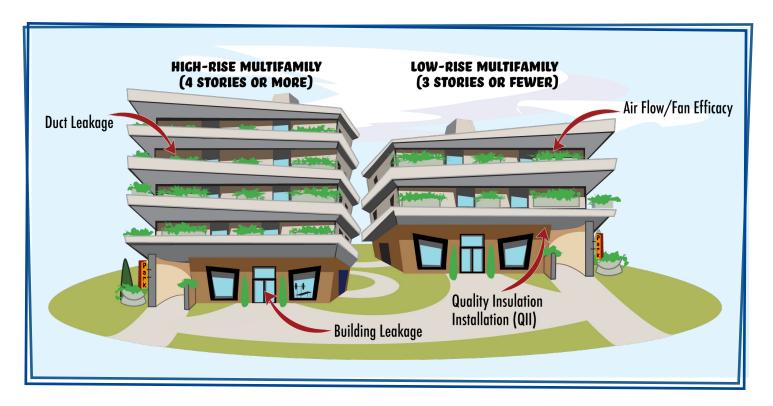


Figure 1. Examples of HERS Measures in Low-rise and High-rise Multifamily Buildings



# What Are HERS Raters?

The California Energy Commission (CEC) has delegated the responsibility for certain field verification and diagnostic testing to HERS Raters, who must be specially trained and certified to perform these services to help avoid poor construction quality and substandard equipment installation. In California's 2022 Energy Code, installed energy features that trigger HERS verification are referred to as HERS measures. These cover a variety of features such as HVAC systems, plumbing systems, air barriers, and insulation for residential and some nonresidential projects. Certified HERS Raters perform on-site inspections and diagnostic tests to ensure proper installation according to verification protocols defined by the CEC in the Energy Code's Reference Appendices.

### Why Should I Care about HERS Verification?

As a building owner, you should expect your building's energy features to be installed as designed and be compliant with the Energy Code. The HERS verification process provides an extra level of quality assurance toward these goals.

As a contractor or developer, the HERS verification process helps to assure you that your subcontractors are meeting the Energy Code requirements for the building features that they install.

For code enforcement personnel, HERS Raters provide specialized expertise on the diagnostic tests and tools pertaining to the Energy Code so that building departments can focus on the other codes and inspections.

### When is HERS Verification Required?

For low-rise multifamily buildings, a HERS Rater is required when the Certificate of Compliance (LMCC) indicates that HERS measures are required.

For high-rise multifamily buildings, a HERS Rater is required when the Certificate of Compliance (NRCC) indicates that HERS measures are required.

### Who Hires the HERS Rater and When?

For New Construction and Additions, the building owner or the general contractor typically hires the HERS Raters. For HVAC Alterations, HERS Raters are typically hired by the installing contractor. HERS Raters cannot be employees of the builder or contractor whose work requires verification. HERS Raters cannot have a financial interest in the builder's or contractor's business and cannot advocate or recommend the use of any product or service that they are verifying.

Typically, HERS Raters should be engaged at the beginning of a project so that they can coordinate with the contractor on when they need to perform inspections and testing. It is also important to coordinate with the energy consultant or compliance documentation author when assigning a Rater to the project. This allows the Rater to have access to the registered compliance documentation associated with the project. HERS Raters can provide excellent advice to each installer on how best to simplify the process and comply with the requirements.

# Who Does What?

### **Energy Consultants**

Energy consultants determine appropriate HERS Measures required for the project scope and include them in the Certificate of Compliance (LMCC and NRCC).

### **HERS Raters**

HERS Raters verify compliance of installed HERS measures with California's Energy Code. They are third-party special inspectors who perform field verification and diagnostic testing services for the benefit of the homeowner or building owner to ensure proper measure installation and systems operation. They document their verifications by completing and signing a Certificate of Verification (LMCV or NRCV) for each HERS measure.

### **HERS Providers**

HERS Providers are organizations approved by the CEC to train and certify HERS Raters. HERS Providers also conduct quality assurance reviews of HERS Raters' work to maintain consistency and integrity among HERS Raters. Providers maintain a HERS registry, which contains an online database of projects that require HERS verification and provides easy access to all related compliance documents. There are multiple HERS Providers approved by the CEC.

### **Building Inspectors**

Building inspectors perform inspections for all building codes (i.e., structural, electrical, and plumbing) throughout construction. HERS Raters are special inspectors assisting the building inspector. HERS Raters must perform the visual inspections and diagnostic testing required for HERS measures to the satisfaction of the building official. Building inspectors are responsible for field verifying all of the non-HERS measures and ensuring that all compliance documentation is completed.

### Installers

Installers are the tradespeople who install the energy-related features in the building. They must take responsibility for the features that they install by completing and signing the Certificates of Installation (LMCI or NRCI). If they install building features subject to HERS measures, they must cooperate with the HERS Rater to ensure that all energy-related features pass HERS verification.



# What Forms Are Used?

For each HERS verification, the Energy Code specifies forms to be completed for different tests and building types. Table 1 details which type of compliance form is required for each HERS verification.

+ Certificate of Compliance (LMCC and NRCC): These forms list the building features required to comply with the Energy Code. These features vary depending on the project and the compliance approach used and are submitted to the building department as part of the building permit application.



### Regulatory Advisory: Low-rise Multifamily Compliance Forms for the 2022 Energy Code

The CEC approved the first low-rise multifamily data registry on February 14, 2024, so effective February 15, 2024, permit applications for low-rise multifamily projects that show Energy Code compliance using HERS measures must include only registered Certificates of Compliance. Refer to the CEC's updated Regulatory Advisory issued February 15, 2024 for more information on available multifamily data registries and for CEC staff recommendations to authorities having jurisdiction on steps to take for different projects. These steps ensure that permits for low-rise multifamily buildings under the 2022 Energy Code are not delayed and that documents are properly registered when required.

| Compliance Forms  |      |      |      |      |  |  |  |  |
|---|------|------|------|------|--|--|--|--|
| Building Type Certificates of |      |      |      |      |  |  |  |  |
| Multifamily Buildings with ≥ 4 Habitable Stories  | NRCC | NRCI | NRCV | NRCA |  |  |  |  |
| Multifamily Buildings with ≤ 3 Habitable Stories  | LMCC | LMCI | LMCV | NRCA |  |  |  |  |

**Table 1.** Compliance Forms Required by Building Type

### **How Are Compliance Forms Registered?**

Registering energy compliance forms helps to ensure the validity, accuracy, and tracking of required energy compliance documentation. For low-rise multifamily projects, the building department requires a registered Certificate of Compliance (LMCC) before issuing a permit when HERS measures are required (with limited exceptions pertaining to HVAC Alterations). For highrise multifamily projects, the Certificate of Compliance (NRCC) and Certificate of Installation (NRCI) are not registered, while the Certificate of Verification forms (NRCV) are registered with HERS Providers. See the 2022 Energy Code Nonresidential and Multifamily Buildings: Acceptance Testing Fact Sheet for what is required for Certificate of Acceptance (NRCA) compliance forms.

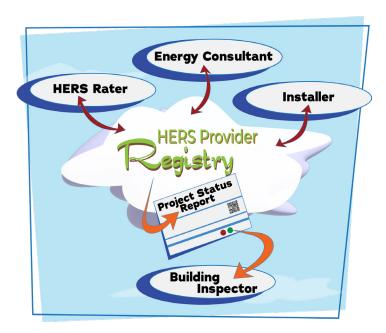
The registration process for low-rise multifamily projects is generally initiated by the energy consultant for New Construction and by the HVAC contractor for Alterations involving HVAC changeouts. However, the process can be started by anyone. The responsible party (owner, architect or contractor) needs to establish password-protected access to the HERS Provider's registry to sign off and approve the required energy features before a registered LMCC may be generated. This approval is an important step in the process and should be completed to prevent delays in the completion of additional required documentation.

To establish an account with a HERS Provider, go to a Provider's website and follow the directions based on your role (building owner, contractor, architect, or designer). For security purposes, this process requires you to provide personal identification. Once your account is established, you have access to either create or sign off on a project, whichever is applicable. Additional responsible parties can be given access to the project by whoever controls it.

After the LMCC has been approved and signed off by all responsible parties, it is ready to be submitted to the building department. The registered compliance documents contain a unique registration number, date and time stamp, watermark, and the name of the HERS Provider at the bottom of each page. This tells the building department that the documents are registered. If any changes occur to the scope of work, the LMCC needs to be revised, re-registered and re-submitted to the building department for approval. The registration process can be completed electronically through the HERS Provider's registry.

# Project Status Report (Low-rise Multifamily Only)

For code enforcement personnel, the Project Status Report is an important tool for the Energy Code compliance process. This online tool is accessible through the HERS registries and is specific to each project. The status report is currently only available for low-rise multifamily projects. It lists all the forms that are required for each unique project and shows the status of each form by a simple red dot (not complete) or green dot (complete). This greatly simplifies and streamlines the building inspector's job. A project should not be finalized until every form has a green dot.



**Figure 2.** Overview of the HERS Registry Information Pathway for Low-rise Multifamily Buildings



# **Energy Code Requirements**

The Energy Code has three different types of requirements. See below for a description of each.



### **Mandatory Measures**

All conditioned buildings must meet a set of Mandatory requirements. Some Mandatory Measures are HERS Measures, such as indoor air quality (IAQ), ventilation, airflow measurement, and duct leakage.



### **Prescriptive Approach**

The Prescriptive Approach is considered the most direct path to compliance. There are different Prescriptive requirements for New Construction, Additions, and Alterations. Some Prescriptive Measures are HERS Measures, including refrigerant charge verification and quality insulation installation (QII).



### Performance Approach

The Performance Approach requires using energy analysis software that has been approved by the CEC. There are many "extra credit" measures available only through the Performance Approach that trigger HERS verification.



# **€** What Is HERS Sampling?

# HERS Sampling is a way to reduce the number of verifications needed when there is a lot of similarity between dwelling units being inspected.

Dwelling units are placed in small sample groups (up to five or seven dwelling units per group, depending on sampling method) in which all dwelling units are self-tested by the installer, and then one dwelling unit from the sample group is randomly selected and retested by the HERS Rater.

To be in a sample group together, all dwelling units must have been worked on by the same installing contractor or contractors and have the same set of features that need to be tested. Sampling is tracked by the HERS registry. Individual jurisdictions can choose to allow sampling or not on projects within their jurisdiction.

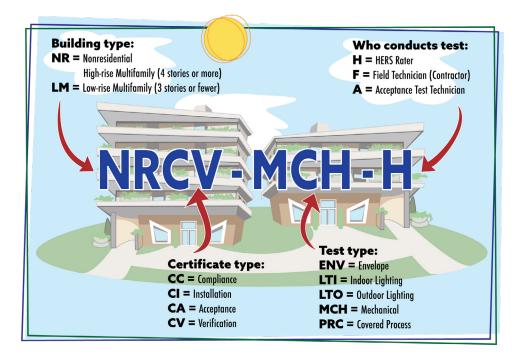


Figure 3. Naming Conventions - What Each Form Name Means



# **Who Conducts the Tests?**

For each verification test, the Energy Code specifies who is allowed to conduct the test: a Home Energy Rating System (HERS) Rater, a certified acceptance testing technician (ATT), or a field technician. Table 2 below compares these three roles. Tables 3 and 4 detail which test is allowed to be conducted by whom.

| How Do Testers Compare?               |  |  |   |  |  |  |  |  |  |
|---------------------------------------|--|--|---|--|--|--|--|--|--|
| Tester<br>Characteristics             | Home Energy Rating System (HERS) Rater   | Acceptance Test Technician<br>(ATT)  | Field Technician  |  |  |  |  |  |  |
| Project Team or<br>Third-party Status | The HERS Rater is hired from outside of the project team to provide third-party verification.  | The ATT sometimes is a member of the project team such as:  → Installing technician → Other technician → Commissioning agent The ATT may also be hired from outside of the project team.   | The field technician is a member of the project team such as:   → Installing technician  → Other technician  The field technician may also be hired from outside of the project team.   |  |  |  |  |  |  |
| Qualifications                        | HERS Raters are trained and certified by HERS Providers.   | ATTs must show that they have a minimum of three years of experience working in the area of testing that they perform. They are trained and certified by ATTCP Providers.  | A field technician should have:  → Proven field service experience  → Ability to test and repair equipment to the satisfaction of the enforcement agency  |  |  |  |  |  |  |
| Systems Tested                        | HERS Raters perform verification testing:  + Mechanical systems + Envelope systems   | ATTs are required to perform acceptance testing:  + Lighting controls + Mechanical systems   | Field technicians may perform HERS verification for some HERS measures associated with high-rise dwelling units (see Tables 3 and 4), and acceptance testing for:  + Some Envelope features + Covered process systems   |  |  |  |  |  |  |
| Special<br>Coordination               | <ul> <li>For low-rise multifamily buildings, compliance forms must be registered with a HERS Provider.         All other building types are required to have applicable Certificate of Verification (NRCV) forms registered.</li> <li>★ The HERS Rater must be hired early in the project, especially for a multifamily building project.</li> </ul> | When a CLATT or CMATT is required to perform acceptance testing:  → Certified ATTs may be found on ATTCP websites.  → The ATT should be selected early in the project to facilitate coordination.  | When a field technician will perform HERS testing in a high-rise dwelling unit (see Tables 3 and 4 below), the field technician who will perform the test should be selected early in the project to facilitate coordination.   |  |  |  |  |  |  |
| Responsibilities                      | The HERS Rater is responsible for:  → Performing the verification test  → Documenting the test on the NRCV or LMCV form and signing the form  → Submitting the form to the HERS Provider  → Providing the registered NRCV or LMCV form to the building owner and onsite for inspection   | The ATT is responsible for:  + Performing the acceptance test  + Documenting the test on the NRCA form and signing the form  + Submitting the form to the ATTCP  + Providing the NRCA form to the building owner and onsite for inspection | When the field technician performs HERS testing for high-rise multifamily dwelling units, they are responsible for:  + Performing the HERS test + Documenting the test on the NRCI form and signing the form  + Providing the NRCI form to the building owner and onsite for inspection |  |  |  |  |  |  |

**Table 2.** How Do Acceptance Testers Compare?



# **What HERS Verifications Are Required?**

The following table lists the HERS measures associated with multifamily projects for New Construction, Additions, and Alterations. Note that some HERS measures are Mandatory, some are Prescriptive (required when using the Prescriptive Approach) and some are used only for Performance credits.

| HERS Verification Forms Required for Duct Measures   |                            |                      |  |                   |                         |  |  |  |  |
|--|----------------------------|----------------------|--|-------------------|-------------------------|--|--|--|--|
| Multifamily<br>HERS Measures:  | Space Type                 | Mandatory            | Prescriptive                                   | Performance       | Reference<br>Appendices | Compliance Form                                      |  |  |  |
| <b>Duct Sealing</b> : Diagnostic testing of ducts to not exceed maximum leakage  | Low-rise<br>Dwelling unit  | <u>§160.3(b)5K</u>   | §180.2(b)2A<br>(alteration)                    | N/A               | RA3.1.4.3               | HERS Rater: LMCV-MCH-20                              |  |  |  |
| rate based on project type (new or altered). Verification that approved  | Low-rise<br>Common area    | §160.3(c)2Hi         | §180.2(b)2B<br>(alteration)                    | N/A               | <u>NA2.1</u>            | HERS Rater: LMCV-MCH-20<br>or<br>ATT: NRCA-MCH-04-A* |  |  |  |
| materials are used.  | High-rise<br>Dwelling unit | <u>§160.3(b)5K</u>   | §180.2(b)2A<br>(alteration)                    | N/A               | RA3.1.4.3               | Field Technician:<br>NRCI-MCH-20                     |  |  |  |
|  | High-rise<br>Common area   | §160.3(c)2Hi         | §180.2(b)2B<br>(alteration)                    | N/A               | NA2.1                   | HERS Rater: NRCV-MCH-04<br>or<br>ATT: NRCA-MCH-04-A* |  |  |  |
| duct design and air filter devices conform to Table 160.3-A or 160.3-B. Note: This is an alternative   | Low-rise<br>Dwelling unit  | <u>§160.3(b)5Lii</u> | §180.2(b)2A<br>(alteration)                    | N/A               | RA3.1.4.4<br>RA3.1.4.5  | HERS Rater: LMCV-MCH-22                              |  |  |  |
|  | High-rise<br>Dwelling unit | <u>§160.3(b)5Lii</u> | <u>§180.2(b)2A</u> (alteration)                | N/A               | RA3.1.4.4<br>RA3.1.4.5  | Field Technician:<br>NRCI-MCH-22                     |  |  |  |
| Bypass Ducts (Zonally Controlled Central Forced Air Unit [FAU]): Visual verification that zonally controlled systems comply with the bypass duct prohibition in §170.2(c)3C. Note: Bypass ducts are only allowed with a Performance penalty. | Low-rise<br>Dwelling unit  | N/A                  | §170.2(c)3C                                    | NRMF ACM<br>6.8.3 | RA3.1.4.6               | HERS Rater: LMCV-MCH -23                             |  |  |  |
|  | High-rise<br>Dwelling unit | N/A                  | §170.2(c)3C                                    | N/A               | RA3.1.4.6               | N/A  |  |  |  |
| Low Leakage Ducts Entirely in Conditioned Space: Visual verification   | Low-rise<br>Dwelling unit  | N/A                  | <u>§170.2(c)3Biia</u><br><u>§170.2(c)3Biib</u> | NRMF ACM<br>6.8.3 | RA3.1.4.3.8             | HERS Rater: LMCV-MCH -21                             |  |  |  |
| that duct system location is<br>entirely within conditioned<br>space and tested for<br>maximum leakage.  | High-rise<br>Dwelling unit | N/A                  | \$170.2(c)3Biia<br>\$170.2(c)3Biib             | N/A               | RA3.1.4.3.8             | N/A  |  |  |  |
| Duct Design, Buried Ducts, Deeply Buried Ducts: Visual verification that duct system is  | Low-rise<br>Dwelling unit  | N/A                  | N/A  | NRMF ACM<br>6.8.3 | RA3.1.4.1               | HERS Rater: LMCV-MCH -29                             |  |  |  |
| installed according to the provided design used in the model.  | High-rise<br>Dwelling unit | N/A                  | N/A  | N/A               | N/A                     | N/A  |  |  |  |

<sup>\*</sup> For more information about the requirements of the ATT, see <u>2022 Energy Code Nonresidential and Multifamily Buildings: Acceptance Testing Fact Sheet.</u>

Table 3. HERS Verification Forms required for Duct Measures



| HERS Verification Forms Required for Heating and Cooling Equipment Measures   |                            |                    |                                  |  |                                |                                     |  |
|---|----------------------------|--------------------|----------------------------------|--|--------------------------------|-------------------------------------|--|
| Multifamily<br>HERS Measures:   | Space Type                 | Mandatory          | Prescriptive                     | Performance                                | Reference<br>Appendices        | Compliance<br>Form                  |  |
| <b>Cooling System Airflow:</b> Diagnostic testing and confirmation that system  | Low-rise<br>Dwelling unit  | <u>§160.3(b)5L</u> | §180.2(b)2A<br>(altered)         | Credit for lower target                    | <u>RA3.3</u>                   | HERS Rater:<br>LMCV-MCH-23          |  |
| airflow is greater than or equal to a specified criterion (CFM/ton).  | High-rise<br>Dwelling unit | §160.3(b)5L        | §180.2(b)2A<br>(alteration)      | N/A  | <u>RA3.3</u>                   | Field<br>Technician:<br>NRCI-MCH-23 |  |
| Cooling System Air-handling Fan Efficacy: Diagnostic testing and  | Low-rise<br>Dwelling unit  | §160.3(b)5L        | §180.2(b)2A<br>(altered)         | Credit for lower target                    | <u>RA3.3</u>                   | HERS Rater:<br>LMCV-MCH-22          |  |
| confirmation that fan efficacy is less than or equal to a specified criterion (W/CFM).  | High-rise<br>Dwelling unit | §160.3(b)5L        | §180.2(b)2A<br>(alteration)      | N/A  | <u>RA3.3</u>                   | Field<br>Technician:<br>NRCI-MCH-22 |  |
| Refrigerant Charge: Diagnostic testing of air-cooled air conditioners and air-source heat pumps to verify that the system has the correct refrigerant         | Low-rise<br>Dwelling unit  | N/A                | <u>§170.2(c)3Bi</u><br>CZ 2,8-15 | Credit in CZ 1,3-7,16 NRMF ACM 6.8.2       | RA1.2; RA3.2<br>RA3.3; RA3.4.2 | HERS Rater:<br>LMCV-MCH-25          |  |
| charge. Airflow testing.  Note: "Fault Indicator Display" can be installed as an alternative.   | High-rise<br>Dwelling unit | N/A                | §170.2(c)3Bi<br>CZ 2,8-15        | N/A  | RA1.2; RA3.2<br>RA3.3; RA3.4.2 | Field<br>Technician:<br>NRCI-MCH-25 |  |
| Increased Air Conditioner/Heat Pump Efficiency: Visual verification of installation of specific air conditioner   | Low-rise<br>Dwelling unit  | N/A                | N/A                              | §170.1(d)2A<br>NRMF ACM 6.8.1<br>and 6.8.2 | <u>RA3.4</u>                   | HERS Rater:<br>LMCV-MCH-26          |  |
| or heat pump equipment models when<br>Performance credit for increased SEER2/<br>EER2/HSPF2 is used.  | High-rise<br>Dwelling unit | N/A                | N/A                              | N/A  | N/A                            | N/A                                 |  |
| Rated Heat Pump Capacity: Visual verification of the installed heating capacity values at 47°F and 17°F of  | Low-rise<br>Dwelling unit  | N/A                | N/A                              | §170.1(d)2E<br>NRMF ACM 6.8.1              | RA3.4.4.2                      | HERS Rater:<br>LMCV-MCH-26          |  |
| heat pump systems when Performance compliance uses a heat pump system not using default values.   | High-rise<br>Dwelling unit | N/A                | N/A                              | N/A  | N/A                            | N/A                                 |  |
| Low Leakage Air-Handling Units:<br>Visual verification of the installation<br>of a listed factory-sealed air-handling<br>unit (tested by the manufacturer and | Low-rise<br>Dwelling unit  | N/A                | N/A                              | §170.1(d)2C<br>NRMF ACM 6.8.2              | RA3.1.4.3.9                    | HERS Rater:<br>LMCV-MCH-<br>20c     |  |
| listed with the CEC). Note: Allows Performance credit of a lower duct leakage rate.   | High-rise<br>Dwelling unit | N/A                | N/A                              | N/A  | N/A                            | N/A                                 |  |
| Variable Capacity Heat Pump<br>Compliance Option (VCHP): Field<br>verification that installed system meets  | Low-rise<br>Dwelling unit  | N/A                | N/A                              | §170.1(d)2B<br>NRMF ACM 6.8.1              | RA3.4.4.3                      | HERS Rater:<br>LMCV-MCH-33          |  |
| the eligibility requirements of the VCHP compliance option when used for Performance credit.  | High-rise<br>Dwelling unit | N/A                | N/A                              | N/A  | N/A                            | N/A                                 |  |
| <b>Evaporatively-cooled Condensers:</b> Field verification that installation of evaporatively-cooled condensers   | Low rise<br>Dwelling unit  | N/A                | N/A                              | §170.1(d)2A<br>NRMF ACM 6.8.2              | <u>RA4.3.2</u>                 | HERS Rater:<br>LMCV-MCH-26          |  |
| meet the eligibility requirements. Duct leakage and refrigerant charge are required.  | High-rise<br>Dwelling unit | N/A                | N/A                              | N/A  | N/A                            | N/A                                 |  |

 Table 4. HERS Verification Forms required for Heating and Cooling Equipment Measures



| Low-rise Owelling unit  High-rise Owelling unit  Low-rise Owelling unit  | \$160.2(b)2Bi  \$160.2(b)2Bi   | N/A N/A  | Performance N/A  N/A                                | Reference<br>Appendices  RA3.7.4.1  NA2.2.4.1.1  NA2.2.4.1.2                       | Compliance Form  HERS Rater: LMCV-MCH-27  HERS Rater: NRCV-MCH-27-H or   |
|--|--|--|---|--|--|
| High-rise<br>Owelling unit<br>Low-rise<br>Owelling unit  | §160.2(b)2Bi   | N/A  | ·   | NA2.2.4.1.1  | LMCV-MCH-27 HERS Rater: NRCV-MCH-27-H  |
| Low-rise<br>)welling unit  |  |  | N/A   |  | NRCV-MCH-27-H  |
| welling unit   | §160.2(b)2Bii  |  |   |  | ATT: NRCA-MCH-<br>20c-H  |
| 11: 1 .  |  | N/A  | N/A   | RA3.7.4.3  | HERS Rater:<br>LMCV-MCH-32   |
| High-rise<br>Owelling unit   | §160.2(b)2Bii  | N/A  | N/A   | NA2.2.4.1.4  | HERS Rater:<br>NRCV-MCH-32-H<br>or<br>ATT: NRCA-MCH-<br>20b-H  |
| Low-rise<br>Owelling unit  | N/A  | N/A  | §170.1(d)2F<br>NRMF ACM 6.8.2                       | <u>RA3.9</u>   | HERS Rater:<br>LMCV-MCH-31   |
| High-rise<br>Owelling unit   | N/A  | N/A  | N/A   | N/A  | N/A  |
| Low-rise<br>Owelling unit  | §160.2(b)2Biii   | §170.2(c)3Biva   | NRMF ACM 6.8.6                                      | RA3.7.4.4  | HERS Rater:<br>LMCV-MCH-27<br>or<br>ATT:<br>NRCA-MCH-20c-H*  |
| High-rise<br>Owelling unit   | §160.2(b)2Biii   | §170.2(c)3Biva   | NRMF ACM 6.8.6                                      | NA2.2.4.1.5  | HERS Rater:<br>NRCV-MCH-27b<br>or<br>ATT:<br>NRCA-MCH-20c-H*   |
| Low-rise<br>Owelling unit  | N/A  | N/A  | §170.1(d)2G<br>NRMF ACM 6.8.2                       | <u>RA3.3.4</u>   | HERS Rater:<br>LMCV-MCH-22<br>HERS Rater:<br>LMCV-MCH-23   |
| High-rise<br>Owelling unit   | N/A  | N/A  | N/A   | N/A  | N/A  |
| word with the state of the stat | High-rise velling unit  Low-rise velling unit  High-rise velling unit  Low-rise velling unit  Low-rise velling unit  Low-rise velling unit | relling unit  High-rise relling unit  N/A  N/A  N/A  S160.2(b)2Biii  Figh-rise relling unit  N/A  Aligh-rise relling unit  N/A  N/A  N/A | relling unit  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/ | Velling unit  N/A  N/A  N/A  NRMF ACM 6.8.2  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/ | velling unit Velli |

 Table 5. HERS Verification Forms required for Mechanical Ventilation Measures



| HERS Verification Forms Required for Building Envelope Measures   |                            |                 |                   |                                       |                         |  |  |  |
|---|----------------------------|-----------------|-------------------|---------------------------------------|-------------------------|--|--|--|
| Multifamily<br>HERS Measures:   | Space Type                 | Mandatory       | Prescriptive      | Performance                           | Reference<br>Appendices | Compliance<br>Form                                       |  |  |
| <b>Building Envelope Air Leakage:</b> Diagnostic testing of individual  | Low-rise<br>Dwelling unit  | §160.2(b)2Aivb2 | N/A               | N/A                                   | <u>RA3.8</u>            | HERS Rater:<br>LMCV-MCH-24                               |  |  |
| dwelling units when balanced ventilation is not used.   | High-rise<br>Dwelling unit | §160.2(b)2Aivb2 | N/A               | N/A                                   | <u>NA2.3</u>            | HERS Rater:<br>NRCV-MCH-24                               |  |  |
| Quality Insulation Installation (QII): Visual verification of air barrier prior to insulation, separate visual verification of insulation installation.   | Low-rise<br>Dwelling unit  | N/A             | <u>§170.2(a)6</u> | §170.1(d)2 <u>l</u><br>NRMF ACM 6.7.4 | <u>RA3.5</u>            | HERS Rater:<br>LMCV-ENV-21<br>HERS Rater:<br>LMCV-ENV-22 |  |  |
|   | High-rise<br>Dwelling unit | N/A             | N/A               | N/A                                   | N/A                     | N/A  |  |  |
| Spray Polyurethane Foam (SPF) QII: SPF insulation product when R-values are better than the default used for compliance credit. (Default = open cell @ 3.6 per inch or closed cell @ 5.8 per inch). | Low-rise<br>Dwelling unit  | N/A             | N/A               | NRMF ACM 6.7.3                        | <u>RA3.5.6</u>          | HERS Rater:<br>LMCV-ENV-22                               |  |  |
|   | High-rise<br>Dwelling unit | N/A             | N/A               | N/A                                   | N/A                     | N/A  |  |  |

 Table 6. HERS Verification Forms required for Building Envelope Measures

| HERS Verification Forms Required for Pre-existing Verified Measures  |                            |           |              |                 |                         |                            |  |  |
|--|----------------------------|-----------|--------------|-----------------|-------------------------|----------------------------|--|--|
| Multifamily<br>HERS Measures:  | Space Type                 | Mandatory | Prescriptive | Performance     | Reference<br>Appendices | Compliance<br>Form         |  |  |
| Visual verification of existing building features. Note: Allows Performance credit for improving an existing building feature beyond defaults. | Low-rise<br>Dwelling unit  | N/A       | N/A          | NRMF ACM 6.12.4 | N/A                     | HERS Rater:<br>LMCV-EXC-20 |  |  |
|  | High-rise<br>Dwelling unit | N/A       | N/A          | N/A             | N/A                     | N/A                        |  |  |

 Table 7. HERS Verification Forms required for Pre-existing Verified Measures

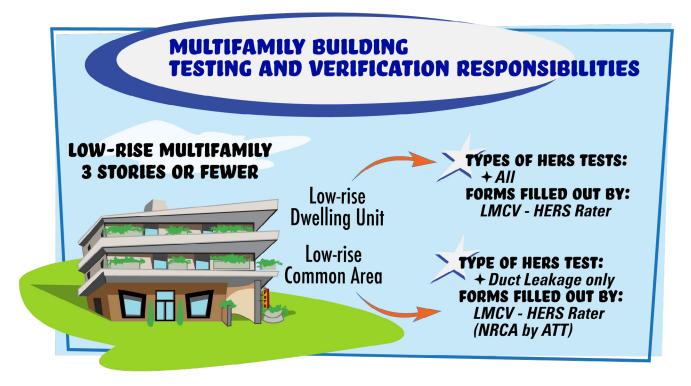


| HERS Verification Forms Required for Domestic Hot Water (DHW) Measures  |                            |           |   |               |                         |                              |  |  |
|---|----------------------------|-----------|---|---------------|-------------------------|------------------------------|--|--|
| Multifamily<br>HERS Measures:   | Space Type                 | Mandatory | Prescriptive                                  | Performance   | Reference<br>Appendices | Compliance<br>Form           |  |  |
| Multifamily Central Hot Water Distribution: Central DHW systems serving a building with more than eight dwelling units  | Low-rise<br>Dwelling unit  | N/A       | N/A   | NRMF ACM 6.11 | <u>RA3.6.8</u>          | HERS Rater:<br>LMCV-PLB-21   |  |  |
| shall have at least two recirculation loops, each serving roughly the same number of dwelling units.  | High-rise<br>Dwelling unit | N/A       | N/A   | NRMF ACM 6.11 | <u>RA3.6.8</u>          | HERS Rater:<br>NRCV-PLB-21   |  |  |
| Pipe Insulation Compliance<br>Credit: Visual verification that<br>all hot water pipes in non-<br>recirculating systems are insulated  | Low-rise<br>Dwelling unit  | N/A       | N/A   | NRMF ACM 6.11 | RA3.6.3                 | HERS Rater:<br>LMCV-PLB-22   |  |  |
| and that corners and tees are fully insulated.  | High-rise<br>Dwelling unit | N/A       | N/A   | NRMF ACM 6.11 | <u>RA3.6.3</u>          | HERS Rater:<br>NRCV-PLB-22   |  |  |
| Parallel Piping Compliance<br>Credit: Visual verification that the<br>measured length of piping between   | Low-rise<br>Dwelling unit  | N/A       | N/A   | NRMF ACM 6.11 | RA3.6.4                 | HERS Rater:<br>LMCV- PLB -22 |  |  |
| the water heater and the single central manifold does not exceed five feet.   | High-rise<br>Dwelling unit | N/A       | N/A   | N/A           | N/A                     | N/A                          |  |  |
| Compact Hot Water Distribution<br>System: Visual verification that<br>the longest pipe run from the water   | Low-rise<br>Dwelling unit  | N/A       | §170.2(d)1Ai                                  | NRMF ACM 6.11 | RA3.6.5                 | HERS Rater:<br>LMCV- PLB -22 |  |  |
| heater to a hot water fixture does<br>not exceed a maximum length per<br>RA3.6.5. Note: This is a Prescriptive<br>option or Performance credit.   | High-rise<br>Dwelling unit | N/A       | <u>§170.2(d)1Ai</u>                           | NRMF ACM 6.11 | <u>RA3.6.5</u>          | HERS Rater:<br>NRCV- PLB -22 |  |  |
| Recirculation Pump Controls: Visual verification of controls specified in Performance   | Low-rise<br>Dwelling unit  | N/A       | §170.2(d)                                     | NRMF ACM 6.11 | RA3.6.6 -<br>RA3.6.7    | HERS Rater:<br>LMCV- PLB -22 |  |  |
| compliance documents and pipe insulation.   | High-rise<br>Dwelling unit | N/A       | N/A   | N/A           | N/A                     | N/A                          |  |  |
| Drain Water Heat Recovery (DWHR): Visual verification that the DWHR unit(s) and installation configuration meet the eligibility requirements and the DWHR(s) is certified to the CEC to have two of the requirements.  Note: This is a Prescriptive option or Performance credit. | Low-rise<br>Dwelling unit  | N/A       | §170.2(d)1Aii<br>§170.2(d)1B<br>§170.2(d)3Cii | NRMF ACM 6.11 | <u>RA3.6.9</u>          | HERS Rater:<br>LMCV- PLB -22 |  |  |
|   | High-rise<br>Dwelling unit | N/A       | N/A   | N/A           | N/A                     | N/A                          |  |  |

Table 8. HERS Verification Forms required for Domestic Hot Water (DHW) Measures



# Which Forms are Required by Whom?



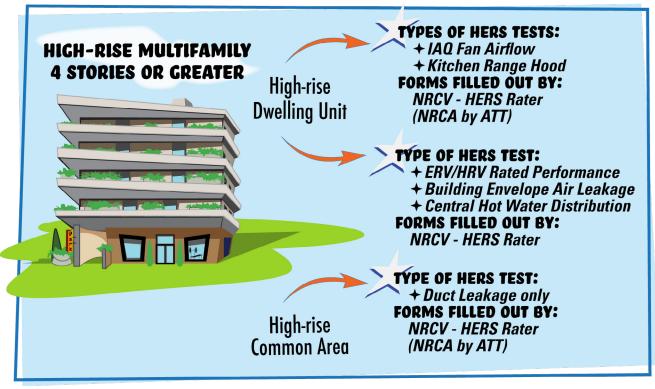


Figure 4. Multifamily Building Testing and Verification Responsibilities



# **For More Information**

### CALIFORNIA ENERGY COMMISSION

#### www.energy.ca.gov

Learn more about the California Energy Commission (CEC) and its programs on its website.

### **2022 Building Energy Efficiency Standards**

Explore the main CEC web portal for the 2022 Energy Code, including information, documents and historical information.

### 2022 Building Energy Efficiency Standards Summary

View or download this visual summary of the Energy Code's purpose, current changes, and impact.

# 2022 Single-family Residential Compliance Manual

Read the Compliance Manual for more in depth information on the Energy Code.

#### **Energy Code Hotline**

Call: 1-800-772-3300 (Free) Email: <u>Title24@energy.ca.gov</u>

#### **Online Resource Center**

Use these online resources developed for building and enforcement communities to learn more about the Energy Code.



#### www.energycodeace.com

Stop by this online "one-stop-shop" for nocost tools, training and resources designed to help you comply with California's Title 24, Part 6 and Title 20.



### www.energycodeace.com/tools

Explore this suite of interactive tools to understand the compliance process, required forms, installation techniques, and energy efficiency regulations in California.

#### **Reference Ace**

Navigate the Title 24, Part 6 Energy Code using an index, keyword search, and hyperlinked text.

#### Q&Ace

Search our online knowledge base or submit your question to Energy Code Ace experts.



### www.energycodeace.com/training

On-demand, live in-person and online training alternatives are tailored to a variety of industry professionals and address key measures.

Of Special Interest:

♦ 2022 Title 24, Part 6 Essentials — Residential Standards: What's New



#### www.energycodeace.com/resources

Downloadable materials provide practical and concise guidance on how and when to comply with California's building and appliance energy efficiency standards.

Of Special Interest:

### Fact Sheets

♦ <u>Single-family Buildings: What's Changed</u> in 2022



Create an account on the Energy Code Ace site and select an industry role for your profile in order to receive messages about all our offerings!

















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