

# CLIMATE ZONES

Please review the climate zones listed below as the coastal areas **DO NOT** require residential duct testing under the 2005 Energy Standards. Only non-exempt climate zones require a third party verification to be performed. If you plan on performing verifications in the non-exempt climate zones, then you must complete the CHEERS Training and get certified.

## Residential Duct Testing Regulations

Apply only in Climate Zones:

2, 9, 10, 11, 12, 13, 14, 15 & 16

Residential Exempt Climate Zones: 1, 3,  
4, 5, 6, 7, 8

Duct Testing Regulations Apply for  
**ALL** Climate Zones for Nonresidential.



# CHEERS® RATER APPLICATION

California Home Energy Efficiency Rating Services

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PLEASE COMPLETE THE ENTIRE APPLICATION. INCOMPLETE APPLICATIONS WILL BE RETURNED WHICH COULD DELAY TRAINING.

Name:

\_\_\_\_\_

Last

\_\_\_\_\_

First

\_\_\_\_\_

M.I.

\_\_\_\_\_

Social Security #

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Home Address:

\_\_\_\_\_

Street:

\_\_\_\_\_

City:

\_\_\_\_\_

State: CA

\_\_\_\_\_

Zip Code:

\_\_\_\_\_

Phone #:

\_\_\_\_\_

Cell #:

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Business:

\_\_\_\_\_

Name:

\_\_\_\_\_

Street:

\_\_\_\_\_

City:

\_\_\_\_\_

State: CA

\_\_\_\_\_

Zip Code:

\_\_\_\_\_

Phone #:

\_\_\_\_\_

Fax #:

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Briefly describe your type of business:

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Cities/Counties where you plan to perform ratings:

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Describe your formal education: (School, City, Degree, Subjects, etc.)

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List the licenses that you have in related field(s):

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Applicant Name: \_\_\_\_\_

The CHEERS training program requires and assumes previous experience in the housing industry and basic knowledge of energy principles. Proficiency using a personal computer software application is a significant part of a rater's responsibility, so previous computer experience is necessary.

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Describe in detail your experience in the residential building industry. Please specify energy-related activities:

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List your energy-related training. Please include the type, provider, dates, and location of training:

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Describe your previous computer experience. Include any energy-related computer programs you have used:

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Describe how you plan to use the CHEERS training and certification:

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List your last two former employers including the dates, position(s) held, supervisor name and phone number:

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ALL OF THE FOLLOWING QUESTIONS MUST BE ANSWERED. A DETAILED STATEMENT MUST SUPPORT AFFIRMATIVE ANSWERS.

1. Are you named in or responsible for any entered and unsatisfied judgments, liens, and/or claims against any bond or cash deposit pertaining to a construction project?  
Yes  No
  
2. Have you ever received a citation from the California Contractors State License Board or had a contractor's license or other professional or vocational license denied, suspended, or revoked by California or elsewhere?  
Yes  No
  
3. Have you ever pleaded guilty or no contest to or been convicted by a court of any offense(s) (other than minor traffic violations) in California or elsewhere? If so, attached a detailed statement regarding the crime, the location, the approximate date, and any jail or probation or parole  
Yes  No

I certify that all statements, answers and representations in this application, including all supplementary statements attached hereto, are true and accurate, and that I have reviewed the entire contents of this application. I authorize investigation of all statements contained herein and the employers listed above to give you any and all information concerning my previous employment and any pertinent information they may have, and release CHEERS from all liability for any damage that may result from utilization of such information.

Signature \_\_\_\_\_ Date \_\_\_\_\_



## CHEERS® Registry Enrollment

Please provide complete information. If applicable, indicate the type(s) of CHEERS certification held by the users listed below.

### **Company Information**

---

Business name

---

Name of Primary User

---

Street Address

---

City

State

Zip code

---

Phone

Fax

Email

### **Billing Address:**

---

Street Address

---

City

State

Zip code

**I have read, understand and agree to the CHEERS Registry Agreement which is incorporated herein by reference.**

Name of Primary User

Signature

Date

---

**I have read, understand and agree to the CHEERS Registry Agreement which is incorporated herein by reference.**

Name(s) of Additional User(s)

Signature

Date

---

---

Street Address (only if different from above)

---

City

State

Zip code

---

Phone

Fax

Email

## **CHEERS® REGISTRY AGREEMENT**

The CHEERS REGISTRY ("REGISTRY") is an information service from California Home Energy Efficiency Rating Services ("CHEERS") accessed primarily via the World Wide Web at [www.cheersregistry.org](http://www.cheersregistry.org). By completing enrollment and using the REGISTRY, you agree to be bound by all terms and conditions in this CHEERS Registry Agreement. CHEERS reserves the right to change such terms and conditions at any time. CHEERS will notify you of such changes by posting a notice in the "Subscriber Announcements" section of the REGISTRY. By using the REGISTRY after any change in the Registry Agreement is posted, you agree to be bound by all of the changes as well. You should consult the "Subscriber Announcements" section each time you access the REGISTRY.

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### **GENERAL TERMS**

CHEERS reserves the right to change or discontinue the REGISTRY, or its availability to you, at any time without prior notice. If any provision of this Agreement is invalid or unenforceable under applicable law, the remaining provisions shall continue in full force and effect. This Agreement, all intellectual property issues, and your rights and obligations shall be governed by the laws of the United States of America and the State of California governing contracts wholly entered into and wholly performed within the State of California.

**CHEERS® EXISTING HOME RATER AGREEMENT**

THIS AGREEMENT, effective as of the date of last signature below, is by and between CALIFORNIA HOME ENERGY EFFICIENCY RATING SERVICES ("CHEERS®") and:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ ("HERS RATER")

WHEREAS, HERS RATER has completed Existing Home Rater Training and passed the Existing Home Rater Certification Test; and

WHEREAS, HERS RATER and CHEERS have executed a current CHEERS TITLE 24/RESIDENTIAL NEW CONSTRUCTION RATER AGREEMENT.

NOW, THEREFORE, in consideration of the mutual covenants set forth herein, CHEERS and HERS RATER agree as follows:

- 1.. HERS RATER warrants that the information set forth in the recital set forth above is true and correct.
2. HERS RATER may use the CHEERS RateTool Software Program ("Program"), the CHEERS Existing Home Rater Training Manual and RateTool Software Instructions ("Manual") and supporting Proprietary Information under the same terms and conditions as set forth in the CHEERS TITLE 24/RESIDENTIAL NEW CONSTRUCTION RATER AGREEMENT for the "Program" and "Manual" and "Proprietary Information."
3. All provisions of the CHEERS TITLE 24/RESIDENTIAL NEW CONSTRUCTION RATER AGREEMENT are hereby incorporated into this Agreement.
4. This Agreement supersedes all prior agreements between the parties regarding existing home ratings, sets forth the entire understanding of the parties with respect to the subject matter hereof, and shall not be amended, modified or waived except in a writing signed by both parties.
5. HERS RATER acknowledges that HERS RATER has read this Agreement, understands it and agrees to be bound by its terms and conditions.

**HERS RATER**

**CHEERS**

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_

\_\_\_\_\_  
Date

**CHEERS® TITLE-24/RESIDENTIAL NEW CONSTRUCTION RATER RENEWAL AGREEMENT**

THIS AGREEMENT, effective as of the date of last signature below, is by and between CALIFORNIA HOME ENERGY EFFICIENCY RATING SERVICES (“CHEERS®”) and:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (“HERS RATER”)

WHEREAS, HERS RATER has submitted a Rater Application, completed Title-24/Residential New Construction Rater Training and passed the Title-24/Residential New Construction Rater Certification Test; and

WHEREAS, HERS RATER and CHEERS have executed prior CHEERS TITLE 24/RESIDENTIAL NEW CONSTRUCTION RATER AGREEMENT(s)

NOW, THEREFORE, in consideration of the mutual covenants set forth herein, CHEERS and HERS RATER agree as follows:

1. HERS RATER warrants that the information set forth in the recital set forth above is true and correct.
2. HERS RATER shall comply with the attached CHEERS Registry Agreement (attachment 1) and CHEERS Fee Schedule (attachment 2). HERS RATER shall abide by the terms and conditions of the CHEERS Registry Agreement and pay all amounts due CHEERS in accordance with the CHEERS Fee Schedule. The term of this Agreement shall co-exist with the term of the CHEERS Registry Enrollment.
3. HERS RATER shall comply with all CHEERS Policies. All current Policies are attached (attachment 3); all new and revised Policies shall be sent to HERS RATER.
4. HERS RATER shall comply with all CHEERS performance and quality assurance procedures (“Procedures”). All current Procedures are attached (attachment 4); all new and revised Procedures shall be sent to HERS RATER. Quality Assurance includes field quality assurance, Registry quality assurance and consumer quality assurance, as well as continuing education (attachment 6).
5. HERS RATER shall comply with all applicable federal, state and local laws and regulations.
6. HERS RATER shall complete all required field verification and diagnostic testing; these activities may not be performed by anyone else. HERS RATER agrees to provide true, accurate and complete ratings, field verification and diagnostic testing.
7. HERS RATER may use the CHEERS Title-24/New Construction Training Manual (“Manual”) and supporting Proprietary Information under the following terms and conditions:
  - A. HERS RATER agrees that the Manual and Proprietary Information are owned exclusively by CHEERS, and are protected by the copyright laws of the United States. HERS RATER agrees that HERS RATER obtains no rights in the Manual

or Proprietary Information, except to use them specifically in accordance with this Agreement.

“Proprietary Information” shall mean CHEERS confidential information, trade secrets and know-how embodied in the Manual and not generally known or available to the public, including, but not limited to, data communication processes and systems design.

- B. The Manual and Proprietary Information may only be used by CHEERS certified raters (“HERS RATERS”) who shall keep strictly confidential the Manual and Proprietary Information, and acknowledge that the Manual and Proprietary Information constitute valuable property and work product of CHEERS, that any breach of the confidentiality obligations hereunder may cause CHEERS irreparable harm and damage, and that all confidentiality obligations hereunder shall survive any expiration or termination of this Agreement.
- C. HERS RATER may not do the following:
  - 1. Make copies of the Manual.
  - 2. Alter, remove or conceal any copyright or trademark notice on Manual.
  - 3. Assign or transfer any rights to use the Manual or Proprietary Information except as set forth in this Agreement.
- D. CHEERS shall have the right, without prior approval from or notice to HERS RATER, to make changes, updates, modifications or enhancements to any of its work product, and such changes, updates, modifications and enhancements shall remain the property of CHEERS.
- E. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, CHEERS DISCLAIMS ALL OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WITH REGARD TO THE MANUAL.
- F. To the maximum extent permitted by applicable law, in no event shall CHEERS be liable for any damages whatsoever (including, without limitation, damages for loss of profits, loss of business information, business interruption, good will or any other financial loss) arising out of the use of or inability to use the Manual, even if CHEERS has been advised of the possibility of such damages.
- 8. HERS RATER shall transmit all data to CHEERS via the CHEERS Registry within forty-eight (48) hours after completing the field verification and diagnostic testing. HERS Rater is responsible and liable for all data transmitted hereunder.
- 9. HERS RATER shall keep confidential all ratings, field verifications and diagnostic testing results and all information gathered from rating customers except for transmission to CHEERS. All confidentiality obligations hereunder shall survive any expiration or termination of this Agreement.
- 10. HERS RATER may not rate or perform a field verification or diagnostic test on any home in which HERS RATER has any financial interest.
- 11. Upon written notice to CHEERS, HERS RATER may terminate this Agreement at any time.

Upon written notice to HERS RATER, CHEERS may terminate this Agreement upon the occurrence of any of the following events:

- A. Failure of HERS RATER to comply with any of the terms and conditions of this Agreement or any other agreement between HERS RATER and CHEERS.
- B. Conviction of a felony.
- C. Disciplinary action by the Contractors State License Board or any like authority.
- D. Willful failure to provide a true, accurate and complete rating, field verification or diagnostic testing.
- E. Pattern of failure to provide a true, accurate and complete rating, field verification, diagnostic testing or data entry, whether willful or not.
- F. Two or more complaints from ratings customers or potential customers.
- G. Failure to promptly pay any amounts due CHEERS
- H. Misrepresentation of HERS RATER' relationship with CHEERS.
- I. Any act or failure to act which, in CHEERS' opinion, harms its name or reputation.

This Agreement shall automatically terminate upon the occurrence of any of the following events: HERS RATER or HERS RATER's business is adjudged bankrupt, placed in the hands of a receiver, makes an assignment for the benefit of creditors, takes the benefit of any insolvency act, or is liquidated or dissolved.

HERS RATER shall return to CHEERS all material received from CHEERS within ten (10) days of the date of the first to occur of any of the above-described events or any termination notice.

- 12. HERS RATER shall act hereunder solely as an independent contractor. HERS RATER shall not represent himself/herself to be an employee or agent of CHEERS. HERS RATER may, of course, indicate that HERS RATER is a CHEERS CERTIFIED HERS RATER.
- 13. HERS RATER shall indemnify and hold harmless CHEERS, its officers, directors, agents, and employees from and against all claims of all kinds arising from or in connection with performance of ratings or any other services for rating customers, including all expenses, costs, settlements, judgments, awards, and legal fees incurred by CHEERS in defense or settlement of such claims.
- 14. HERS RATER shall maintain appropriate insurance coverage in appropriate amounts to cover its performance hereunder.
- 15. This Agreement may not be assigned by HERS RATER.
- 16. This Agreement shall be governed by and construed in accordance with the laws of the State of California.
- 17. HERS RATER acknowledges that HERS RATER has read California Code of Regulations, Title 20, Chapter 4, Article 8, Sections 1670-1675 ("Regulations"), a copy of which is attached (attachment 5) and incorporated herein by reference,

understands the Regulations and agrees to provide home energy rating, field verification services and diagnostic testing services in compliance with the Regulations. HERS RATER agrees to comply with the conflict of interest requirements as specified in Section 1673(i) of the Regulations.

- 18. This Agreement and all attachments which are incorporated herein by reference cancel and supersede all prior CHEERS TITLE-24/RESIDENTIAL NEW CONSTRUCTION RATER AGREEMENT(s) between the parties, set forth the entire understanding of the parties with respect to the subject matter hereof, and shall not be amended, modified or waived except in a writing signed by both parties.
- 19. HERS RATER acknowledges that HERS RATER has read this Agreement, understands it and agrees to be bound by its terms and conditions.

HERS RATER

CHEERS

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

## CHEERS® POLICIES

### CHEERS® POLICY: TRADEMARKS AND SERVICE MARKS

1. CHEERS

CHEERS is a trademark and service mark owned by California Home Energy Efficiency Rating Services and registered with the United States Patent and Trademark Office.

2. CHEERS Certified Rater and CHEERS Certified HERS Analyst

CHEERS Certified Rater and CHEERS Certified HERS Analyst are service marks owned by California Home Energy Efficiency Rating Services. CHEERS has developed these special versions of its trademark/service mark for the exclusive use of certified Raters who have an executed CHEERS Rater Agreement in effect and certified HERS Analysts who have an executed CHEERS HERS Analyst Agreement in effect, respectively.

Examples of their use include, but are not limited to, the following: clothing to be worn by Raters/HERS Analysts, business cards, stationery, identification cards, advertisements and marketing materials.

Note: This service mark cannot be used alone. It must be accompanied by either the name of a Rater/rating business or HERS Analyst/HERS analyst business, respectively.

3. CHEERS Certified Home

CHEERS Certified Home is a service mark owned by California Home Energy Efficiency Rating Services. CHEERS has developed this special version of its trademark/service mark for the exclusive use of certified Raters who have an executed CHEERS Rater Agreement in effect.

Note: This service mark can be used only on, near or in reference to a home which has been rated by a CHEERS Certified Rater. Examples of its use include, but are not limited to, the following: real estate advertisements, yard signs, sign hangers on "for sale" signs, flags, banners and marketing materials.

4. Names of Rating and HERS Analyst Businesses

Names of rating and HERS analyst businesses should not be so similar to CHEERS or California Home Energy Efficiency Rating Services as to mislead or cause confusion among consumers or potential consumers.

Raters and HERS Analysts shall submit business names/name changes in writing to CHEERS prior to using such names. CHEERS will review them for compliance with this policy only. All other decisions regarding business names, including similarity to names of other businesses, are the responsibility of the user.

## **CHEERS® POLICY: USE OF CHEERS NAME IN PRINTED MATERIAL**

### 1. Use of CHEERS Name in Printed Material

Use of CHEERS name in printed material must be approved in advance in writing by the Executive Director.

### 2. Exception

There is one exception to this policy: printed material distributed solely to employees or members of the entity producing the material, commonly known as "in house" material.

Printed material distributed to consumers does not come within this exception.

### 3. Procedure for Approval

The printed material must be submitted to the Executive Director. If it is approved, the Executive Director will then submit it to CHEERS Legal Counsel for review unless the material has been reviewed previously or the material is substantially similar to material reviewed previously.

### 4. Rationale for This Policy

There are several legal and business reasons for this policy:

- A. To enforce copyright policy and trademark policy;
- B. To ensure that all written material is error-free;
- C. To ensure that all written material reflects current policies and procedures of CHEERS, the most recent technical revisions and the most recent decisions of CHEERS;
- D. To ensure that CHEERS speaks with one voice;
- E. To archive for future reference and use all printed material.

## **CHEERS® POLICY: COPYRIGHT**

### 1. Copying of Copyrighted Work

Copying of CHEERS-copyrighted work must be approved in advance in writing by the Executive Director.

### 2. Form of Copyright Notice

© **COPYRIGHT** 1998 California Home Energy Efficiency Rating Services (CHEERS). All rights reserved.

If "c" in a circle is not available, for example on a computer program, delete it from the notice.

The year in the notice is the year of creation of the work.

### 3. When to Use Copyright Notice

The copyright notice should be used if all three of the following tests are met:

- A. The work was created by or for CHEERS;
- B. The work is owned by CHEERS;
- C. CHEERS does not wish the work to be copied.

### 4. Where to Place Copyright Notice

On written work, place the copyright notice on the cover or the first page after the cover.

On a computer program, place the copyright notice on a label affixed to the disk and on a label affixed to the envelope or box which holds the disk. Also, place the notice with the title of the program at the beginning of the program so that it is visible on the user's screen.

### 5. Unauthorized Copying of Copyrighted Work

Any unauthorized copying of copyrighted work must be reported promptly to the Executive Director, who will then consult CHEERS' Legal Counsel on appropriate courses of action.

**CHEERS® POLICY: PROPERTY WHICH MAY NOT BE RATED/ANALYZED BY CHEERS RATERS/HERS ANALYSTS**

1. Property Which May Not Be Rated/Analyzed by CHEERS Raters/HERS Analysts

CHEERS Raters/HERS Analysts may not rate/analyze any of the following property:

- A. Property in which Rater/HERS Analyst has a direct or indirect ownership interest;
- B. Property in which Rater/HERS Analyst has a financial interest of any kind;
- C. Property for which Rater/HERS Analyst is making a loan or negotiating a loan or soliciting a prospective lender to make a loan with the expectation of compensation;
- D. Property occupied by Rater/HERS Analyst;
- E. Property managed by Rater/HERS Analyst.

For Items A thru E, "Rater/HERS Analyst" shall be deemed to include any person related to Rater/HERS Analyst by blood or marriage.

2. Property Which May Not Be Rated/Analyzed by CHEERS Raters/HERS Analysts With Active Real Estate Licenses

In addition to property above-listed, CHEERS Rater/HERS Analysts with active real estate licenses issued by the State of California may not rate any of the following property:

- A. Property listed by Rater/HERS Analyst for sale, lease, rent, exchange or any business opportunity;
- B. Property listed for sale, lease, rent, exchange or any business opportunity by an individual broker, corporate broker, or franchised brokerage company responsible for Rater/HERS Analyst;
- C. Property for which Rater/HERS Analyst is engaged in the business of, or acting in the capacity of, a real estate licensee;
- D. Property in connection with which Rater/HERS Analyst is performing any acts for which a real estate license is required.

**CHEERS® POLICY: SELLING OF GOODS/SERVICES TO CHEERS EXISTING HOUSING CONSUMERS BY CHEERS RATERS**

1. Selling of Goods/Services Other Than Ratings

CHEERS Raters may sell goods and/or services other than CHEERS ratings to CHEERS consumers subject to the following conditions:

- A. Raters shall keep confidential all information regarding CHEERS consumers, including names and addresses.
- B. Raters shall not sell or attempt to sell any goods and/or other services to CHEERS consumers for a ten (10) day period commencing with the date of the onsite rating inspection. (This waiting period is designed to allow consumers to receive and review CHEERS recommendations.) Raters may leave business cards, sales brochures, and other written material with consumers.

Exceptions

The waiting period does not apply to blower door tests and the following repairs/improvements provided they are completed in conjunction with a blower door test:

- broken glass in windows and doors
- caulking
- duct leaks including plenum
- HVAC filter replacement
- weatherstripping.

The rationale for these exceptions is twofold: blower door tests increase the accuracy of CHEERS ratings, and completing the above-listed repairs/improvements in conjunction with a blower door test is in the consumer's best interest.

- C. Raters shall submit separate bids, and separately itemize on invoices if no bid is submitted, for goods/services recommended by CHEERS, and goods/services not recommended by CHEERS.

**POLICIES EFFECTIVE JANUARY 1, 1999 and REVISED OCTOBER 1, 2001**

CALIFORNIA CODE OF REGULATIONS  
TITLE 20  
Chapter 4, Article 8, Sections 1670 - 1675

**CALIFORNIA HOME ENERGY RATING SYSTEM PROGRAM**

Approved Final Text

**' 1670. Scope.**

These regulations establish the California Home Energy Rating System Program pursuant to Public Resources Code Section 25942, including procedures for the training and certification of raters, and a certification program for home energy rating system organizations (herein referred to as providers) and for home energy rating services (herein referred to as rating systems). These regulations apply only to field verification and diagnostic testing services pursuant to Chapter 7 of the ACM Manual for demonstrating compliance with Title 24 building energy performance standards. Regulations for other home energy rating services will be addressed in a subsequent rulemaking proceeding. Until the subsequent rulemaking is concluded, home energy rating system services other than field verification and diagnostic testing are not required to be certified.

NOTE: Authority: Public Resources Code Sections 25942 and 25213.

Reference: Public Resources Code Sections 25942 and 25213.

**' 1671. Definitions.**

For the purposes of these regulations, the following definitions shall apply:

**ACM Manual** means the *Low-Rise Residential Alternative Calculation Method Approval Manual* (Energy Commission Publication No. P-400-98-003) adopted in Section 10-109(b)(2) of Title 24, Part 1 of the California Code of Regulations.

**Certified**, as to a provider and rating system, means having successfully completed the certification requirements as specified by Section 1674.

**Commission** means the State of California Energy Resources Conservation and Development Commission, commonly known as the California Energy Commission.

**Financial Interest** means an ownership interest, debt agreement, or employer/employee relationship. Financial interest does not include ownership of less than 5% of the outstanding equity securities of a publicly traded corporation.

**Independent Entity** means having no financial interest in, and not advocating or recommending the use of any product or service as a means of gaining increased business with, firms or persons specified in Section 1673(i).

NOTE: The definitions of "independent entity" and "financial interest," together with Section 1673(i), prohibit conflicts of interest between providers and raters, or between providers/raters and builders/subcontractors.

**Provider** means an organization that administers a home energy rating system in compliance with these regulations (referred to as a "home energy rating service organization" in Section 25942 of the Public Resources Code).

**Rater** means a person performing the site inspection and data collection required to produce a home energy rating or the field verification and diagnostic testing required for demonstrating compliance with the Title 24 energy performance standards, who is listed on a registry in compliance with Section 1673(c).

**Rating** means a representation on a 0 to 100 scale of the annual source energy efficiency of a home, as specified in Section 1672(c).

**Rating System** means the materials, analytical tools, diagnostic tools and procedures to produce home energy ratings and provide home energy rating and field verification and diagnostic testing services (referred to as "home energy rating services" in Section 25942 of the Public Resources Code).

**Service Water Heating** means service water heating as defined in Section 101(b) of Title 24, Part 6 of the California Code of Regulations.

**Source Energy** means source energy as defined in Section 101(b) and calculated as specified in Section 102 of Title 24, Part 6 of the California Code of Regulations.

NOTE: Authority: Public Resources Code Sections 25942 and 25213.

Reference: Public Resources Code Sections 25942 and 25213.

#### ' 1672. Requirements for Rating Systems.

(a) Rating Site Inspections and Diagnostic Testing. Each rating shall be based on a site inspection of the home, and diagnostic testing as specified by the rating system. Each rating system shall have documented procedures for site inspection and diagnostic testing of rated homes.

(b) Energy Uses Rated. Each rating system shall rate the total combined energy efficiency of the following energy uses of each home rated:

- (1) space heating;
- (2) space cooling; and
- (3) service hot water.

(c) Rating Scale. Each rating system shall rate the annual source energy efficiency of homes on a scale of 0 to 100. The rating shall be for the combined total of the three energy uses described in Section 1672(b).

(d) Field Verification and Diagnostic Testing. The provider and rater shall provide field verification and diagnostic testing of energy efficiency improvements as a condition for those improvements to qualify for Title 24 building energy performance standards compliance credit, as required by Chapter 7, Appendix F, and Sections 3.8.3 and 3.9 of the ACM Manual. Providers and raters shall not knowingly provide untrue, inaccurate or incomplete field verification or diagnostic testing information or report field verification or test results that were not conducted in compliance with these regulations. Providers and raters shall not knowingly accept payment or consideration in exchange for reporting a rating or field verification and diagnostic test result that was not in fact conducted and reported in compliance with these regulations.

NOTE: Authority: Public Resources Code Sections 25942 and 25213.

Reference: Public Resources Code Sections 25942 and 25213.

**' 1673. Requirements for Providers.**

(a) Training and Certification Procedures for Raters. Each provider shall conduct the following rater training and certification procedures.

(1) Each provider's training program shall include classroom and field training for rater applicants in analysis, theory and practical application in at least the following areas:

- (A) home energy consumption and efficiency data collection, organization and analysis;
- (B) principles of heat transfer;
- (C) building energy feature design and construction practice, including construction quality assurance and "house as a system" concepts;
- (D) safety practices relevant to home energy auditing procedures and equipment;
- (E) home energy audit procedures;
- (F) energy efficiency effects of building site characteristics;
- (G) types and characteristics of space heating, space cooling, service hot water and hard wired lighting systems;
- (H) mathematical calculations necessary to utilize the rating system;

(I) the function and proper use of diagnostic devices including but not necessarily limited to: duct leakage testing equipment, blower doors and air flow and pressure measurement devices;

(J) construction types, equipment types and their associated energy efficiency ramifications;

(K) field verification and diagnostic testing requirements of Chapter 7, Appendix F, and Sections 3.8.3 and 3.9 of the ACM Manual; and

(L) California Home Energy Rating System Program requirements specified in these regulations.

(2) The training shall include thorough instruction in the use of the provider's rating system.

(3) The training shall require rater applicants to satisfactorily perform field verification and diagnostic testing for at least two homes in the presence and under the direct supervision of the provider's trainer. The provider shall review and approve this field verification and diagnostic testing for accuracy and completeness.

(4) The provider shall require each rater applicant to take a written and practical test that demonstrates his or her competence in all subjects specified in Section 1673(a)(1). The provider shall retain all results of these tests for five years from the date of the test.

(5) Each provider may establish a Commission-approved challenge test that evaluates competence in each area addressed by the provider's training program. If a rater applicant successfully passes this challenge test, the provider may waive the classroom training requirement and the written and practical test requirements for that applicant. An applicant who passes this challenge test must also successfully meet the requirements specified in Section 1673(a)(3).

(b) Rater Agreements. As a condition of rater registry under Section 1673(c), each provider shall ensure that a rater applicant who has met the requirements of Section 1673(a) has entered into an agreement with the provider to provide home energy rating and field verification and diagnostic services in compliance with these regulations. The agreement shall require raters to:

(1) provide home energy rating and field verification services in compliance with these regulations;

(2) provide true, accurate, and complete ratings, field verification and diagnostic testing; and

(3) comply with the conflict of interest requirements as specified in Section 1673(i).

(c) Rater Registry. As a condition of rater registry, each provider shall certify to the Commission that a rater applicant has met the requirements of Section 1673(a) and entered into an agreement

meeting the requirements of Section 1673(b). The provider shall maintain a registry of all raters who meet these requirements, provide an electronic copy of the registry to the Commission, and make that registry available in printed or electronic form upon written request.

(d) Field Verification and Diagnostic Testing Data Collection. Each provider shall collect and maintain for a period of five years, the following information for each home for which field verification and diagnostic testing service is provided:

- (1) *Certificates of Field Verification and Diagnostic Testing*;
- (2) *Certificates of Compliance*;
- (3) *Installation Certificates*; and
- (4) other reports made pursuant to Chapter 7 of the ACM Manual.

Alternatively, the information contained in these documents may be collected and stored electronically as long as all of the content and certification signatures from the specified documents are retained.

(e) Field Verification and Diagnostic Testing Evaluation. Providers shall maintain a database of the information specified in Section 1673(d) for a minimum 10% random sample of the homes actually field verified and diagnostically tested annually, or 500 such homes annually, whichever is less. Each provider shall provide this information annually in electronic form to the Commission for evaluating the effectiveness of field verification and diagnostic testing. To the extent that the Commission makes this information public, it will do so only in aggregated form. All of this information shall be organized according to climate zones as defined in Section 101(b) of Title 24, Part 6 of the California Code of Regulations.

(f) Data Submittal. Upon the Commission's request, but not more frequently than annually, a provider shall submit to the Commission the total of the number of homes for which field verification and diagnostic testing services were provided since the last data submittal, and a report of the following information for each home for which field verification and diagnostic testing service was provided:

- (1) the energy efficiency improvements field verified and diagnostic tested;
- (2) whether or not the builder chose to include the home in a sample for field verification and diagnostic testing as specified in Section 7.4 of the ACM Manual;
- (3) whether or not initial field verification and testing as specified in Section 7.4.1 of the ACM Manual was conducted on the home;
- (4) whether or not the home in a sample was actually selected and field verified and diagnostically tested as specified in Section 7.4.2 of the ACM Manual;

(5) whether or not the home in a sample was actually selected for resampling and field verified and diagnostically tested after a sampling failure was found in the sample as specified in Section 7.4.3 of the ACM Manual;

(6) whether or not the home in a sample was field verified and diagnostically tested and corrective action was taken after a resampling failure was found in the sample as specified in Section 7.4.3 of the ACM Manual;

(7) whether or not the homeowner declined to have field verification, diagnostic testing and corrective action taken after occupancy as specified in Section 7.4.3 of the ACM Manual.

All of this information shall be organized according to climate zones as defined in Section 101(b) of Title 24, Part 6 of the California Code of Regulations. To the extent the Commission makes this information public, it will do so only in an aggregated form.

(g) Training Materials Retention. Each provider shall retain for at least five years after the last date they are used at least one copy of all materials used to train raters.

(h) Quality Assurance. Each provider shall have a quality assurance program that provides for at least the following:

(1) Initial review. The provider shall review and approve for accuracy and completeness the field verification and diagnostic testing documentation for at least the first five homes which a rater performs after completion of the requirements specified in Section 1673(a)(1), (2) and (3), not including those homes field verified and diagnostically tested under the provider's direct supervision as specified in Section 1673(a)(3).

(2) Field checks of raters. For each rater, the provider shall annually evaluate the greater of one home or one percent of the rater's annual total of homes for which field verification and diagnostic testing services were provided. The provider shall independently repeat the field verification and diagnostic testing to check whether field verification and diagnostic testing was accurately completed by the rater, and determine whether information was completely collected and reported as required by Chapter 7 of the ACM Manual.

(3) Complaint response system. Each provider shall have a system for receiving complaints. The provider shall respond to and resolve complaints related to ratings and field verification and diagnostic testing services and reports. Providers shall ensure that raters inform purchasers and recipients of ratings and field verifications and diagnostic testing services about the complaint system. Each provider shall retain all records of complaints received and responses to complaints for five years after the date the complaint is presented to the provider.

(i) Conflict of Interest.

(1) Providers shall be independent entities from raters who provide field verification and diagnostic testing.

(2) Providers and raters shall be independent entities from the builder and from the subcontractor installer of energy efficiency improvements field verified or diagnostically tested.

NOTE: Authority: Public Resources Code Sections 25942 and 25213.

Reference: Public Resources Code Sections 25942 and 25213.

**' 1674. Certification of Providers and Rating Systems.**

(a) Application. A person or entity wishing to be certified as a provider and wishing to have a rating system certified shall submit four copies of an application to the Commission. The application shall contain:

(1) a complete copy of all field verification and diagnostic testing procedures, manuals, handbooks, rating system descriptions, and training materials;

(2) a detailed explanation of how the rating system meets each requirement of Section 1672;

(3) a detailed explanation of how the provider meets each requirement of Section 1673;

(4) the name, address, and telephone number of the provider and a statement of where its principal place of business is and where and upon whom service of legal process can be made;

(5) upon Commission request, if the provider is a corporation, a copy of the articles of incorporation and the current by-laws;

(6) if the provider is a partnership, the names, addresses, telephone numbers, and partnership status (for example, general, managing) of all the partners, and a copy of the current partnership agreement;

(7) the names, addresses, telephone numbers, and business relationships of all the provider's owners, parents, subsidiaries, and affiliates;

(8) a statement that ratings are accurate, consistent and uniform, utility bill estimates are reasonable, and recommendations on cost-effective energy efficiency improvement measures are reliable;

(9) a statement that the provider understands and will not knowingly fail to comply with the requirements of these regulations; and

(10) a statement under penalty of perjury that all statements in the application are true, provided in the form specified by Section 2015.5 of the Code of Civil Procedure.

(b) Confidentiality of Information. Any provider who submits the required application information and wishes to have that information treated as confidential in order to limit its disclosure shall, at the time of submitting the information, apply for a confidential designation as specified in Section 2505 of Title 20 of the California Code of Regulations.

(c) Commission Consideration.

(1) The Commission's Executive Director may request additional information from the applicant necessary to evaluate the application.

(2) The Executive Director shall provide a copy of its evaluation to interested persons. The Executive Director may convene a workshop to receive comments from interested persons.

(4) Within 90 days of receiving the complete application, the Executive Director shall send to the Commission and to the applicant a written recommendation that the Commission certify the provider and its rating system or deny that certification.

(5) The Executive Director shall recommend certifying the provider and rating system if it finds the following:

(A) the rating system meets all of the requirements of Section 1672; and

(B) the provider meets all of the requirements of Section 1673.

(5) The Commission shall act on the recommendation at its next regularly scheduled Business Meeting that is at least fifteen days after the date that the recommendation was mailed to the applicant.

(6) The Commission shall certify the proposed provider and rating system if it confirms the Executive Director's findings in Section 1674(c)(5).

(7) Upon certification the Commission shall assign the provider a three-digit identification number.

(d) Re-certification. A certified provider shall notify the Commission whenever any change occurs in any of the information, documentation, or materials, the provider submitted to the Commission under Section 1674(a), and shall submit the changed information to the Commission. Where this changed information could affect the provider's compliance with these regulations, the Commission may require that the provider and the rating system be re-certified under the process described in Section 1674. The Executive Director may waive re-certification for non-substantive changes. The Commission may also require that providers and rating systems be re-certified if the requirements of these regulations are amended or modified.

NOTE: Authority: Public Resources Code Sections 25942 and 25213.

Reference: Public Resources Code Sections 25942 and 25213.

**' 1675. Review by the Commission.**

(a) Annual Review. The Commission may annually review the performance of providers certified under Section 1674 to determine whether the providers comply with the requirements of these regulations. This review may include interviewing recipients of ratings and field verification and diagnostic testing services and reports on a voluntary basis.

(b) Complaint Proceedings. Any person or entity may file a complaint concerning any violation of these regulations as provided for in Section 1230 et. seq. of Title 20 of the California Code of Regulations. The Commission may, for good cause, conduct an investigation and, if necessary, hearing, under the procedures established in Section 1230 et. seq. of Title 20 of the California Code of Regulations.

Each provider shall provide all information requested by the Commission regarding any annual review or complaint proceeding.

(c) Commission Determination. If the Commission determines there is a violation of these regulations or that a provider is no longer providing rating, field verification and diagnostic testing services, the Commission may revoke the certification of the provider pursuant to Section 1230 et. seq. of Title 20 of the California Code of Regulations.

NOTE: Authority: Public Resources Code Sections 25942 and 25213.      Reference: Public Resources Code Sections 25942 and 25213.

## 7. Home Energy Rating Systems (HERS) Required Field Verification and Diagnostic Testing

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### 7.1. California Home Energy Rating Systems

Compliance credit for particular energy efficiency measures, which the Commission specifies, requires field verification and diagnostic testing of as-constructed dwelling units (as defined in Section 7.9) by a certified HERS (Home Energy Rating System) rater. The Commission approves HERS providers, subject to the Commission's HERS regulations, which appear in the California Code of Regulations, Title 20, Division 2, Chapter 4, Article 8, Sections 1670-1675. Approved HERS providers are authorized to certify HERS raters and maintain quality control over field verification and diagnostic testing ratings.

When compliance documentation indicates field verification and diagnostic testing of specific energy efficiency measures as a condition for complying with Title 24, Part 6, an approved HERS provider and certified HERS rater shall be used to conduct the field verification and diagnostic testing. HERS providers and raters shall be considered special inspectors by building departments, and shall demonstrate competence, to the satisfaction of the building official, for the visual inspections and diagnostic testing. The HERS provider and rater shall be independent entities from the builder or subcontractor installer of the energy efficiency improvements being tested and verified, and shall have no financial interest in the installation of the improvements. Third Party Quality Control Programs approved by the Commission may serve the function of HERS raters for field verification purposes as specified in Section 7.6.

The remainder of this chapter describes the:

- Measures that require field verification or testing (including references to test procedures or protocols that shall be followed by installers and HERS raters);
- Required documentation and communication steps;
- Requirements for certification by the installer that the installation complies;
- Required HERS rater verification procedures, and sampling procedures to be used if the builder chooses to do sampling;
- Requirements for Third Party Quality Control Programs that are authorized to serve the function of HERS raters;
- Requirements for sampling when field verification and diagnostic testing is required for additions and alterations; and
- Responsibilities of each of the parties involved in the field verification and diagnostic testing process.

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### 7.2. Measures Required Field Verification and Diagnostic Testing

Table R7-1 describes the measures that require installer certification and HERS rater field verification and diagnostic testing, and identifies the protocol or test procedure in the appendices that shall be used for completing installer and HERS rater diagnostic testing and HERS rater field verification.

Table R7-1 – Summary of Measures Requiring Field Verification and Diagnostic Testing

Measure Title	Description	Protocol or Test Procedure
<b>Duct Measures</b>		
Duct Sealing	Package D requires that space conditioning ducts be sealed. If sealed and tested ducts are claimed in the proposed design ACM calculation, diagnostic testing is required to verify that leakage is less than the specified criteria.	ACM Appendix RC-2005
Supply Duct Location, Surface Area and R-factor	If compliance credit is claimed for improved supply duct location, surface area and R-value, field verification is required to verify that duct system was installed according to the design, including location, size and length of ducts, duct insulation R-value and installation of buried ducts. <sup>1</sup>	ACM Appendix RC-2005
<b>Air Conditioner Measures</b>		
Improved Refrigerant Charge	Package D requires in some climate zones that split system air conditioners and heat pumps be diagnostically tested in the field to verify that they have the correct refrigerant charge (see Section 4.7.3). The Proposed Design is modeled with less efficiency if diagnostic testing and field verification is not performed.	ACM Appendix RD-2005
Installation of Thermostatic Expansion Valve (TXV)	A TXV may be installed as an alternative to refrigerant charge testing. The existence of a TXV has the same calculated benefit as refrigerant charge testing and requires field verification.	ACM Appendix RI-2005
Adequate Air Flow	Air conditioner efficiency requires adequate airflow across the evaporator coil. Compliance credit may be taken when airflow is higher than the criteria specified	ACM Appendix RE-2005
Air Handler Fan Watt Draw	If compliance credit is taken for reductions in fan power, the installed fan power shall be diagnostically tested and verified in the field.	ACM Appendix RE-2005
High Energy Efficiency Ratio (EER)	Compliance credit may be taken for increases in EER by installation of specific air conditioner or heat pump models, but only if the installation of that high EER model is field verified.	ACM Appendix RI-2005
Maximum Cooling Capacity	An additional compliance credit may be taken when the requirements for the combination of adequate air flow, duct sealing and Improved refrigerant charge are met and air conditioners are sized according to the ACM calculations. Field verification is required.	ACM Appendix RF-2005
<b>Building Envelope Measures</b>		
Building Envelope Sealing	The default building envelope specific leakage area (SLA) is specified in Section 4.5.1. Compliance credit may be taken for improved building envelope sealing, but only if lower SLA values are field verified through diagnostic testing.	ASTM E779-03
High Quality Insulation Installation	ACMs recognize Standard and improved envelope construction. Compliance credit for improved envelope construction requires field verification.	ACM Appendix RH-2005

1. Note: Compliance credit for increased duct insulation R-value (not buried ducts) may be taken without field verification if the R-value is the same throughout the building, and for supply ducts located in crawlspaces and garages where all supply registers are either in the floor or within 2 feet of the floor. These two credits may be taken subject only to building department inspection.

2. Note: The requirement for verification of a high EER does not apply to equipment rated only with an EER.

All features that require verification and/or testing shall be listed in the *Field Verification and Diagnostic Testing* section of the *Certificate of Compliance* (CF-1R). The listing shall include "eligibility and installation criteria" for such features. Field verified and diagnostically tested features shall be described in the *Compliance Supplement*. Installers shall certify that the requirements for compliance have been met on

the *Installation Certificate* (CF-6R). Field Verification and diagnostic testing shall be performed by a HERS rater and documented on the *Certificate of Field Verification and Diagnostic Testing* (CF-6R).

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### **7.3. Summary of Documentation and Communication**

The documentation and communication process for measures that require field verification and diagnostic testing is summarized below. The subsequent sections of this chapter contain additional information.

- The documentation author shall complete the compliance documents, including the CF-1R. A CF-1R shall be prepared for each dwelling unit. For multi-family buildings a single CF-1R is typically prepared for a whole building, but separate compliance documentation shall be required for dwelling units that have measures requiring field verification and diagnostic testing.
- The documentation author shall provide a signed Certificate of Compliance (CF-1R) to the builder, which indicates that any HERS diagnostic testing and field verification measure is required for compliance. The builder shall make arrangements for the services of a certified HERS rater prior to installation of the measures, so that once the installation is complete the HERS rater has ample time to complete the field verification and diagnostic testing without delaying final approval of occupancy by the building department.
- The builder or subcontractor installs the measure(s) that require field verification and diagnostic testing. The builder or installer completes diagnostic testing and the procedures specified in Section 7.4. When the installation is complete, the builder or subcontractor completes the CF-6R (Installation Certificate), keeping it at the building site for review by the building department. A copy of the CF-6R is also provided to the HERS rater.
- The HERS rater shall complete the field verification and diagnostic testing as specified in Section 7.5, and provides signed CF-4Rs, Certificate of Field Verification and Diagnostic Testing, to the HERS provider, builder and building department. The building department shall not approve a dwelling unit for occupancy until the building department has received a CF-4R that has been signed by the certified HERS rater.

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### **7.4 Installer Requirements for Installation Certification (CF-6R)**

Installation certificates (CF-6R) are required for each and every dwelling unit. When the installation of measures that require field verification and diagnostic testing is complete, the builder or the builder's subcontractor shall complete diagnostic testing and the procedures specified in this section. When the installation is complete, the builder or the builder's subcontractor shall complete the CF-6R (Installation Certificate), and keep it at the building site for review by the building department. The builder also shall provide a copy of the Installation Certificate to the HERS rater for any measures requiring field verification and diagnostic testing.

#### **7.4.1 Measures Requiring Diagnostic Testing and Field Verification**

When compliance includes duct sealing, improved air conditioner refrigerant charge and airflow across the evaporator coil, reduced air conditioner fan power or building envelope sealing, builder employees or subcontractors shall:

- complete diagnostic testing, and
- certify on the CF-6R the diagnostic test results and that the work meets the requirements for compliance credit.

For refrigerant charge and airflow measurement when the outside temperature is below 55°F, the installer shall follow the alternate charge and airflow measurement procedure described in Appendix RD, Section RD3. Builder employees or subcontractors using these procedures shall certify on the CF-6R that they used

these procedures, the diagnostic results, that the work meets the requirements for compliance credit, and that they will return to correct refrigerant charge and airflow if the HERS rater determines at a later time when the outside temperature is above 55°F that correction is necessary.

For duct sealing diagnostic testing completed at the rough-in stage of construction, builder employees or subcontractors shall:

- at rough-in, complete the fan pressurization test and certify on the CF-6R the diagnostic results,
- after installation of the interior finishing wall, complete the installer visual inspection at final construction stage (See ACM RC-2005), and
- certify on the CF-6R the diagnostic results and that the work meets the requirements for compliance credit.

#### 7.4.2 Measures Requiring Field Verification

When compliance includes supply duct location, surface area and R-value improvements, installation of an air conditioner thermostatic expansion valve, high air conditioner EER, and high quality building envelope construction builder employees or subcontractors shall:

- record the feature on the CF-6R,
- record on the CF-6R field measurements required to field verify the measure, and
- certify on the CF-6R that the work meets the requirements for compliance credit.

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### 7.5 Verification and Sampling Procedures

At the builder's option HERS field verification and diagnostic testing shall be completed either for each dwelling unit or for a sample of dwelling units in which the measure requiring field verification and diagnostic testing is installed. Note that if multiple measures requiring field verification and diagnostic testing are installed in dwelling units, sample testing does not have to be completed for all of the measures in the same dwelling unit. Dwelling units in the sample shall be in the same subdivision or multifamily housing development. Field verification and diagnostic testing for compliance credit for duct sealing shall use the diagnostic duct leakage from fan pressurization of ducts in Section RC3.1, ACM RC-2005. Field verification and diagnostic testing for compliance credit for refrigerant charge and airflow measurement shall use the standard charge and airflow measurement procedure specified in ACM RD-2005. Field verification and diagnostic testing shall not use the alternate charge and airflow measurement procedure. Field verification and diagnostic testing shall be scheduled and completed when the outside temperature is above 55°F.

The builder shall provide the HERS rater a copy of the CF-6R containing the installation certifications required in Section 7.4. Prior to completing field verification and diagnostic testing, the HERS rater shall first verify that the installation certifications have been completed.

If the builder chooses the sampling option, the procedures described in this section shall be followed. Sampling procedures described in this section shall be included in the *Residential Manual*.

#### 7.5.1 Initial Field Verification and Testing

The HERS rater shall diagnostically test and field verify the first dwelling unit of each model. To be considered the same model, dwelling units shall be in the same subdivision or multifamily housing development and have the same energy designs and features, including the same floor area and volume, for each dwelling unit, as shown on the CF-1R. For multi-family buildings, variations in exterior surface areas caused by location of dwelling units within the building shall not cause dwelling units to be considered a different model. This initial testing allows the builder to identify and correct any potential construction flaws or practices in the build out of each model. If field verification and diagnostic testing determine that the

requirements for compliance are met, the HERS rater shall provide a signed and dated *Certificate of Field Verification and Diagnostic Testing* (CF-4R) to the builder the HERS provider, and the building department.

#### 7.5.2 Sample Field Verification and Testing

After the initial testing is completed, the builder shall identify a group of up to seven dwelling units from which a sample will be selected for testing, and notify the HERS provider. If multiple measures requiring field verification and diagnostic testing are installed, each dwelling unit in the group shall have the same measures requiring field verification and diagnostic testing as the other dwelling units in the group. If some dwelling units have installed a different set of measures requiring field verification and diagnostic testing, these dwelling units shall be in a separate group.

The builder shall identify the group of dwelling units by location of County, City and either the street address or the subdivision and lot number, or the multifamily housing project name and shall identify the names and license numbers of subcontractors responsible for installations requiring diagnostic testing or field verification. The builder may remove dwelling units from the group by notifying the HERS provider. Removed dwelling units which are constructed shall either be field verified and diagnostically tested individually or shall be included in a subsequent group for sampling.

The HERS rater shall select a minimum of one dwelling unit out of the group for diagnostic testing and field verification. When several dwelling units are ready for testing at the same time, the HERS rater shall randomly select the dwelling units to be tested. The HERS rater shall diagnostically test and field verify the dwelling units selected by the HERS rater.

If field verification and diagnostic testing determines that the requirements for compliance are met, the HERS rater shall provide a signed and dated *Certificate of Field Verification and Diagnostic Testing* to the builder, the HERS provider, and the building department. The *Certificate of Field Verification and Diagnostic Testing* shall report the successful diagnostic testing results and conclusions regarding compliance for the tested dwelling unit.

The HERS rater shall also provide a signed and dated *Certificate of Field Verification and Diagnostic Testing* to the builder and the HERS provider for up to six additional dwelling units in the group. The *Certificate* shall not be provided for dwelling units in which the feature requiring field verification and diagnostic testing has not been installed, sealed or completed.

Whenever the builder changes subcontractors who are responsible for the feature that is being diagnostically field verified and tested, the builder shall notify the HERS rater of any subcontractors who have changed, and terminate sampling for the identified group. All dwelling units using *HERS Required Verification* features for compliance that were installed by previous subcontractors or were subject to verification and testing under the supervision of a previous HERS provider, for which the builder does not have a completed *Certificate of Field Verification and Diagnostic Testing*, shall either be individually tested or included in a separate group for sampling. Dwelling units with installations completed by new subcontractors shall either be individually tested or shall be included in a new sampling group following a new *Initial Field Verification and Testing*.

The HERS rater shall not notify the builder when sample testing will occur prior to the completion of the work that is to be tested. After the HERS rater notifies the builder when testing will occur, the builder shall not do additional work on the features being tested.

#### 7.5.3 Re-sampling, Full Testing and Corrective Action

When a failure is encountered during sample testing, the HERS rater shall conduct re-sampling to assess whether that failure is unique or the rest of the dwelling units are likely to have similar failings. The HERS rater shall select for re-sampling one of the up to six untested dwelling units in the group.

If testing in dwelling units in the re-sample confirms that the requirements for compliance credit are met, then the dwelling unit with the failure shall not be considered an indication of failure in the other dwelling

units in the group. The HERS rater shall provide a signed and dated *Certificate of Field Verification and Diagnostic Testing* to the builder, the HERS provider, and the building department for up to six additional dwelling units in the group, including the dwelling unit in the re-sample. The builder shall take corrective action for the dwelling unit with the failure, and then the HERS rater shall retest to verify compliance and issue a signed and dated *Certificate of Field Verification and Diagnostic Testing* to the builder.

If field verification and testing in the re-sample results in a second failure, the builder shall take corrective action in all unoccupied dwelling units in the group that have not been tested. In cases where corrective action would require destruction of building components, the builder may choose to reanalyze compliance and choose different measures that will achieve compliance. In this case a new Certificate of Compliance shall be completed and submitted to the HERS provider, HERS rater and building department. When a builder chooses to take corrective action, the HERS rater shall conduct field verification and diagnostic testing in each of these dwelling units to verify that problems have been corrected and that the requirements for compliance have been met, and shall report to the HERS provider, the builder, and the building department.

Builders shall offer at no charge to building owners (for a definition of “building owner” and of other terms used see Section 7.9) in occupied dwelling units in the group to complete field verification and testing and corrective action if necessary. Builders shall report to the HERS provider the identifying location of any dwelling unit in which the building owner declines field verification and testing and corrective. The HERS provider shall verify that the builder has made this offer. If a building owner in an occupied dwelling unit declines this offer, field verification, testing and corrective action will not be required for that dwelling unit and the dwelling unit will no longer be considered a part of the group. If a building owner accepts this offer, the builder shall take corrective action. The HERS rater shall then conduct field verification and diagnostic testing to verify that problems have been corrected and that the requirements for compliance have been met, and shall report to the HERS provider, builder, and the building department.

The HERS provider shall file a report with the building department explaining all action taken (including field verification, testing, corrective action, offers to building owners for testing and corrective action and building owner declines of such offers) to bring into compliance dwelling units for which full testing has been required. If corrective action requires work not specifically exempted by the CMC or the CBC, the builder shall obtain a permit from the building department prior to commencement of any of the work.

If additional dwelling units in the group are completed during the time required to correct, field verify and test the previously completed dwelling units in the group, the rater shall individually field verify and diagnostically test those additional dwelling units to confirm that the requirements for compliance credit are met.

Corrections shall not be made to a sampled or re-sampled dwelling unit to avoid a failure. If corrections are made to a sampled or re-sampled dwelling unit to avoid failure, corrections, field verification and testing shall be performed on 100% of the dwelling units in the group.

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## **7.6 Third Party Quality Control Programs**

The Commission may approve Third Party Quality Control Programs that serve the function of HERS raters for field verification purposes. Third Party Quality Control Programs shall provide training to installers regarding compliance requirements for measures for which diagnostic testing and field verification is required. Third Party Quality Control Programs shall collect data from participating installers for each installation completed for compliance credit, complete data checking analysis to evaluate the validity and accuracy of the data to independently determine whether compliance has been achieved, provide direction to the installer to retest and correct problems when data checking determines that compliance has not been achieved, require resubmission of data when retesting and correction is directed, and maintain a database of all data submitted by installers in a format that is acceptable to the Commission and available to the Commission upon request. The data that is collected by the Third Party Quality Control Program shall be more detailed than the data required for showing compliance with the Standards, shall provide an independent check on the validity and accuracy of the installer’s claim that compliance has been achieved,

and shall not be alterable by the installer to indicate that compliance has been achieved when in fact compliance has not been achieved.

The Third Party Quality Control Program shall also obtain the services of a HERS rater to conduct independent field verifications, completing all of the responsibilities of a HERS rater as specified in this Chapter with the exception that sampling shall be completed for a group of up to thirty dwelling units with a minimum sample of one out of every thirty sequentially completed dwelling units from the group. The HERS rater shall be an independent entity from the Third Party Quality Control Program. Re-sampling, Full Testing and Corrective Action shall be completed as specified in section 7.5.3 with the exception that re-sampling shall be completed for a minimum of one out of every thirty dwelling units from the group.

The Third Party Quality Control Program shall meet all of the requirements of a HERS rater specified in the Commission's HERS Program regulations (California Code of Regulations, Title 20, Division 2, Chapter 4, Article 8, Sections 1670 -1675), including the requirement to be an independent entity from the builder and the HERS rater that provides independent field verifications, subcontractor installer as specified by section 1673(i). A Third Party Quality Control Program may have business relationships with installers participating in the Program to advocate or promote the Program and an installer's participation in the Program, and to advocate or promote products that the Third Party Quality Control Program sells to installers as part of the Program.

Prior to approval by the Commission, the Third Party Quality Control Program shall provide a detailed explanation to the Commission of 1) the data that is to be collected from the installers, 2) the data checking process that will be used to evaluate the validity and accuracy of the data, 3) the justification for why this data checking process will provide strong assurance that the installation actually complies, and 4) the format for the database that will be maintained and provided to the Commission upon request. The Third Party Quality Control Program may apply for a confidential designation of this information as specified in the Commission's Administrative Regulations (California Code of Regulations, Title 20, Division 2, Chapter 7, Article 2, Section 2505). The Third Party Quality Control Program shall also provide a detailed explanation of the training that will be provided to installers, and the procedures that it will follow to complete independent field verifications.

The Third Party Quality Control Program shall be considered for approval as part of the rating system of a HERS Provider, which is certified as specified in the Commission's HERS Program regulations, Section 1674. A Third Party Quality Control Program can be added to the rating system through the recertification of a certified HERS Provider as specified by Section 1674(d).

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### **7.7 Sampling for Additions or Alterations**

When compliance for an addition or alteration requires diagnostic testing and field verification, the building owner may choose for the testing and field verification to be completed for the dwelling unit alone or as part of a sample of dwelling units for which the same installing company has completed work that requires testing and field verification for compliance. The building owner or agent of the building owner shall complete the applicable portions of a Certificate of Compliance (CF-1R). The HERS provider shall define the group for sampling purposes as all dwelling units where the building permit applicant has chosen to have testing and field verification completed as part of a sample for the same installing company. The group shall be no larger than seven. The installing company may request a smaller group for sampling. Whenever the HERS rater for the group is changed, a new group will be established. Initial Field Verification and Testing shall be completed for the first dwelling unit in each group. Re-sampling, Full Testing and Corrective Action shall be completed if necessary as specified by section 7.5.3.

Field verification may be completed by an approved Third Party Quality Control Program as specified in section 7.6. The group for sampling purposes shall be no larger than thirty when a Third Party Quality Control Program is used. The Third Party Quality Control Program may define the group instead of the Provider. When a Third Party Quality Control Program is used, the CF-6R shall document that data checking has indicated that the dwelling unit complies. The building official may approve compliance based

on the CF-6R on the condition that if sampling indicates that re-sampling, full testing and corrective action is necessary, such work shall be completed.

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## **7.8 Summary of Responsibilities**

This section summarizes responsibilities described previously in this chapter and organizes them by the responsible party.

### 7.8.1 Builder

The builder shall make arrangements for the services of a certified HERS rater prior to installation of the measures, so that once the installation is complete the HERS rater has ample time to complete the field verification and diagnostic testing without delaying final approval of occupancy by the building department.

Builder employees or subcontractors responsible for completing either diagnostic testing, visual inspection or verification as specified in Section 7.4 shall certify the diagnostic testing results and that the work meets the requirements for compliance credit on the CF-6R.

The builder shall provide the HERS rater with the identifying location of the group of dwelling units to be included in the sample for field verification and diagnostic testing. The builder shall provide the HERS provider a copy of the CF-6R signed by the builder employees or sub-contractors certifying that diagnostic testing and installation meet the requirements for compliance credit.

The builder shall provide a *Certificate of Field Verification and Diagnostic Testing* (CF-4R) signed and dated by the HERS rater to the building official in conjunction with requests for final inspection for each dwelling unit.

When re-sampling reveals a failure, builders shall offer, at no charge to building owners in occupied dwelling units in the group, to complete field verification, testing and corrective action if necessary. Building owners may decline to have field verification and testing and corrective action completed. Builders shall report the identifying location of any dwelling unit in which the building owner declines field verification and testing and corrective action to the HERS provider. Builders shall take corrective action as required in all unoccupied dwelling units in the group and in occupied dwelling units in the group where building owners have accepted field verification, testing and corrective action.

### 7.8.2 HERS Provider and Rater

The HERS provider shall maintain a list of the dwelling units in the group from which sampling is drawn, the dwelling units selected for sampling, the dwelling units sampled and the results of the sampling, the dwelling units selected for re-sampling, the dwelling units that have been tested and verified as a result of re-sampling, the corrective action taken, and copies of all *Certificates of Field Verification and Diagnostic Testing* for a period of five years.

The HERS rater providing the diagnostic testing and verification shall sign and date a *Certificate of Field Verification and Diagnostic Testing* certifying that he/she has verified that the requirements for compliance credit have been met. *Certificates of Field Verification and Diagnostic Testing* shall be provided for the tested dwelling unit and each of up to six other dwelling units from the group for which compliance is verified based on the results of the sample. The HERS rater shall provide this certificate to the builder, the HERS provider, and the building department.

The HERS rater shall provide a separate *Certificate of Field Verification and Diagnostic Testing* for each dwelling unit the rater determines has met the diagnostic requirements for compliance. The HERS rater shall identify on the *Certificate of Field Verification and Diagnostic Testing* if the dwelling unit has been tested or if it was an untested dwelling unit approved as part of sample testing. The HERS rater shall not sign a *Certificate of Field Verification and Diagnostic Testing* for a dwelling unit that does not have a CF-6R signed by the installer as required in Section 7.4.

If field verification and testing on a sampled dwelling unit identifies a failure to meet the requirements for compliance credit, the HERS rater shall report to the HERS provider, the builder, and the building department that re-sampling will be required.

If re-sampling identifies another failure, the HERS rater shall report to the HERS provider, the builder, and the building department that corrective action and diagnostic testing and field verification will be required for all the untested dwelling units in the group. This report shall specify the identifying location of all dwelling units that shall be fully tested and corrected.

The HERS provider shall also report to the builder once diagnostic testing and field verification has shown that the failures have been corrected in all of the dwelling units except those for which the building owner has declined field verification, testing and corrective action.

When individual dwelling unit testing and verification confirms that the requirements for compliance have been met, the HERS rater shall provide a *Certificate of Field Verification and Diagnostic Testing* for each dwelling unit in the group.

The HERS provider shall file a report with the building department explaining all action taken (including field verification, testing, corrective actions, offers to building owners for testing and corrective action, and building owner declines of such offers) to bring into compliance dwelling units for which full testing has been required.

### 7.8.3 Third Party Quality Control Program

An approved Third Party Quality Control Program shall:

- Provide training to installers regarding compliance requirements for measures for which diagnostic testing and field verification is required,
- Collect data from participating installers for each installation completed for compliance credit,
- Complete data checking analysis to evaluate the validity and accuracy of the data to independently determine whether compliance has been achieved,
- Provide direction to the installer to retest and correct problems when data checking determines that compliance has not been achieved,
- Require resubmission of data when retesting and correction is directed, and
- Maintain a database of all data submitted in a format that is acceptable to the Commission and available to the Commission upon request.

The Third Party Quality Control Program shall obtain the services of an independent HERS rater to conduct independent field verifications, completing all of the responsibilities of a HERS rater as specified in this Chapter with the exception that sampling shall be completed for a group of up to thirty dwelling units and sampling and re-sampling shall be completed for a minimum of one out of every thirty sequentially completed dwelling units from the group.

### 7.8.4 Building Department

The building department at its discretion may require independent testing and field verification to be scheduled so that it can be completed in conjunction with the building department's required inspections, and/or observe the diagnostic testing and field verification performed by builder employees or subcontractors and the certified HERS rater in conjunction with the building department's required inspections to corroborate the results documented in installer certifications, and in the *Certificate of Field Verification and Diagnostic Testing*.

For dwelling units that have used a compliance alternative that requires field verification and diagnostic testing, the building department shall not approve a dwelling unit for occupancy until the building department

has received a *Certificate of Field Verification and Diagnostic Testing* that has been signed and dated by the HERS rater.

If necessary to avoid delay of approval of dwelling units completed when outside temperatures are below 55°F, building departments may approve compliance credit for refrigerant charge and airflow measurement when installers have used the alternate charging and airflow measurement procedure described in ACM Appendix RD-2005, Section RD3. This approval will be on the condition that installers provide a signed agreement to the builder with a copy to the building department to return to correct refrigerant charge and airflow if the HERS rater determines at a later time when the outside temperature is above 55°F that correction is necessary.

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## 7.9 Definitions of Terms Used In This Chapter

The following definitions apply to the procedures described in this document.

**Building Owner** means the owner of the dwelling unit.

**Builder** means the general contractor responsible for construction.

**Building Department** means the city, county or state agency responsible for approving the plans, issuing a building permit and approving occupancy of the dwelling unit.

**Dwelling Unit** means the building for single-family residences or each dwelling unit within a multifamily building project.

**HERS Provider** means an organization that the Commission has approved to administer a home energy rating system program, certify raters and maintain quality control over field verification and diagnostic testing required for compliance with the Energy Efficiency Standards.

**HERS Rater** means a person certified by a Commission approved HERS Provider to perform the field verification and diagnostic testing required for demonstrating compliance with the standards.

**Independent Entity** means having no financial interest in, and not advocating or recommending the use of any product or service as a means of gaining increased business with, firms or persons specified in Section 1673(i) of the California Home Energy Rating System Program regulations (California Code of Regulations, Title 20, Division 2, Chapter 4, Article 8). **Financial Interest** means an ownership interest, debt agreement, or employer/employee relationship. Financial interest does not include ownership of less than 5% of the outstanding equity securities of a publicly traded corporation.

NOTE: The definitions of "independent entity" and "financial interest," together with Section 1673(i), prohibit conflicts of interest between providers and raters, or between providers/raters and builders/subcontractors.

**Documentation Author** means the person responsible for completing the compliance documentation that demonstrates whether a building complies with the standards. Compliance documentation requirements are defined in the Residential Manual.

**Model** means a floor plan and house design that is repeated throughout a subdivision or within a multi-family building. To be considered the same model, dwelling units shall be in the same subdivision or multi-family housing development and have the same energy designs and features, including the same floor area and volume, for each dwelling unit, as shown on the CF-1R. For multi-family buildings, variations in exterior surface areas caused by location within the building shall not cause dwelling units to be considered a different model.

**Certificate of Field Verification and Diagnostic Testing (CF-4R)** means a document with information required by the Commission that is prepared by the HERS rater to certify that measures requiring field verification and diagnostic testing comply with the requirements.

**Certificate of Compliance (CF-1R)** means a document with information required by the Commission that is prepared by the Documentation Author that indicates whether the building includes measures that require field verification and diagnostic testing.

**Installation Certificate (CF-6R)** means a document with information required by the Commission that is prepared by the builder or installer verifying that the measure was installed to meet the requirements of the standards.