Issue 143 | July - September 2023

BLUEPRINT

CALIFORNIA ENERGY COMMISSION

EFFICIENCY DIVISION

In This Issue

California HERS Program Update

The California Home Energy Rating System (HERS) Program is an integral part of the state's efforts to advance energy efficiency and reduce greenhouse gas emissions. The California HERS Program relies on Raters and Providers to ensure various features of a home meet regulations in Title 24, Part 6 (Energy Code) and Title 20, sections 1670-1675, of the California Code of Regulations. Raters verify compliance in the field, conduct home energy audits, and produce California Whole-House Home Energy Ratings. Providers are approved by the California Energy Commission (CEC) to train, certify, and oversee the many Raters operating in the state. Providers also maintain data registries where residential compliance documents are stored for review by various stakeholders. California Field Verification and Diagnostic Testing and California Whole-House Home Energy Ratings are the two separate residential energy efficiency compliance services covered by the California HERS Program.

California Field Verification and Diagnostic Testing

This service is required to verify compliance with aspects of the Energy Code in the field and requires registering compliance documents (CF1R, CF2R, and CF3R) so important compliance data can be collected. Often referred to as HERS verification, this service is completed by a certified Rater and overseen by a CEC-approved Provider. CalCERTS and CHEERS remain approved by the CEC as Providers in good standing for Field Verification and Diagnostic Testing services.

California Whole-House Home Energy Ratings

This voluntary service allows homeowners to hire a certified Rater to assess their home's energy efficiency and provide recommendations for cost-effective upgrades. A Rater conducts a home energy audit to produce a California Whole-House Home Energy Rating. This service is similarly overseen by a CEC-certified Provider through a separate regulatory process in Title 20, sections 1670-1675. It is unlawful to advertise

or purport to operate California Whole-House Home Energy Rating services as CEC-certified when no such services have been certified or approved by the CEC.

Some national programs use "HERS" as a generic term for home energy rating systems. These programs are distinct from state-specific California Whole-House Home Energy Rating services. National incentive programs, rating programs (such as Leadership in Energy and Environmental Design), and Environmental, Social, and Governance (ESG) benchmarking using national home energy rating systems are out of the scope of the California Code of Regulations and remain permissible.

Future of the California HERS Program

To help improve administration of the California HERS Program, the CEC is pursuing three separate rulemaking proceedings. The first amends Title 20 to remove administrative provisions related to mandatory Field Verification and Diagnostic Testing. This will help consolidate the Field Verification and Diagnostic Testing requirements with the Energy Code. The second rulemaking aims to add the limited administrative requirements for the Field Verification and Diagnostic Testing program to Title 24, along with other programmatic updates. The Field Verification and Diagnostic Testing administrative requirements will be removed from Title 20 on the same date that they will go into effect in Title 24, such that the regulations will be in effect, albeit in a different location, with no interruption. Starting with the 2025 Energy Code, updates to Field Verification and Diagnostic Testing requirements will occur every three years when the Energy Code is updated. The third rulemaking will seek to update the regulations for voluntary California Whole-House Home Energy Ratings. The California Whole-House Home Energy Ratings regulations are expected to remain in Title 20. For more information visit the **HERS Program webpage**.

Low-Rise Multifamily Data Registry Update

To date, a low-rise multifamily data registry has not been approved by the CEC for use with the 2022 Energy Code. As a result, applicants have not yet been able to register compliance documents for low-rise multifamily projects. Approved HERS Providers are continuing to work diligently to develop low-rise multifamily data registries, with the goal of submitting registries to the CEC for review and approval by the fourth quarter of 2023. Until a low-rise multifamily data registry is approved by the CEC, the **regulatory advisory** issued November 18, 2022, is still in effect. For more information visit the **HERS Program webpage**.

ENERGY STANDARDS HOTLINE

Available to help with Energy Code (Title 24, Part 6) questions.

✉ EMAIL
title24@energy.ca.gov

☎ CALL
800-772-3300 Toll free in CA
916-654-5106 Outside CA

HOURS 8 a.m.–12 p.m. and 1 p.m.–4:30 p.m.

2022 Compliance Software

Approved updated versions of the 2022 Energy Code compliance software are available on the **2022 Energy Code compliance software webpage**.

- For single-family buildings
  - CBECC-Res 2022.3.0
  - EnergyPro 9.2
- For nonresidential and multifamily buildings
  - CBECC 2022 3.0
  - EnergyPro 9.2

All permit applications submitted on or after January 1, 2023, must comply using software and compliance forms approved for the 2022 Energy Code. Visit the **compliance software webpage** for the latest versions of the software and software expiration dates.

CF1R Special Circumstances

The single-family certificate of compliance (CF1R) is submitted at permit application to ensure the requirements of the Energy Code are being met. The CEC allows compliance by either a prescriptive or a performance method. Performance compliance uses computer-modeling software to trade-off efficiency measures. The CEC has established alternate modeling assumptions for special features. When a building has special features the standard design features will differ from the proposed design, so the building receives appropriate credit for its efficiency. When measures require verification by a HERS rater or are designated as a special feature, the specific requirement is listed on the CF1R. Figure 1.

Checking both the required special features and the HERS features summary section of the CF1R ensures that the efficiency items that received compliance credits are installed and HERS verified as applicable. If a project modeled a special feature and does not install it, then the compliance report should be rerun to ensure the building is still in compliance without the special feature credit.

For more information on the special features see the 2022 Residential Alternative Calculation Method (ACM) **Reference Manual and Appendix A: Special Features**.

New Resources on the ORC

New resources for the 2022 Energy Code are available on the Online Resource Center **envelope webpage** and the **water heating webpage**.

- 2022 air sealing fact sheet
- 2022 single-family, multifamily, and nonresidential cool roof brochures
- 2022 single-family, multifamily, and nonresidential water heating presentations

2022 Energy Code Index

The index for the **2022 Energy Code** has been published. The index is a separate PDF document that can be viewed and downloaded on the **2022 Energy Code webpage**.

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Sample ADU Addition **Calculation Date/Time:** 2023-07-28T07:53:50-07:00 **(Page 4 of 9)**

Calculation Description: **Input File Name:** Sample ADU Addition.ribd22

ENERGY USE INTENSITY

	Standard Design (kBtu/ft^2 - yr)	Proposed Design (kBtu/ft^2 - yr)	Compliance Margin (kBtu/ft^2 - yr)	Margin Percentage
Gross EUI[1]	43.93	43.47	0.46	1.05
Net EUI[2]	43.93	43.47	0.46	1.05

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

REQUIRED SPECIAL FEATURES

The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

- Variable capacity heat pump compliance option (verification details from VCHP Staff report, Appendix B, and RA3)
- Electric water heater exception - Exception 2 to Section 150.1(c)8
- Point of use

HERS FEATURE SUMMARY

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry

- Indoor air quality ventilation
- Kitchen range hood
- Verified Refrigerant Charge
- Airflow in habitable rooms (SC3.1.4.1.7)
- Verified heat pump rated heating capacity
- Wall-mounted thermostat in zones greater than 150 ft2 (SC3.4.5)
- Ductless indoor units located entirely in conditioned space (SC3.1.4.1.8)

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft^2)	Avg. Ceiling Height	Water Heating System 1	Status
ADU Zone	Conditioned	HVAC System	408	9	DHW System	New

Registration Number: Registration Date/Time: HERS Provider:

CA Building Energy Efficiency Standards - 2022 Residential Compliance Report Version: 2022.0.000 Schema Version: rev 20220901 Report Generated: 2023-07-28 07:53:59

Figure 1: Example CF1R required special features and HERS features summary

New Resource Hub

The Energy Resource Hub provides links for guidance, best practices, rebates and loans to assist with decarbonizing buildings and installing electric vehicle charging equipment in residential and commercial buildings. Each page includes a comprehensive list for homeowners and renters, contractors, and local governments. For more information please visit the **building and home energy resource hub webpage**.

CalAPP Program Grants

The California Automated Permit Processing (CalAPP) program application deadline has been extended to May 1, 2024. Visit the **CalAPP program webpage** for program documents, common questions, and the application form.

CalEHP Program Grants

The CEC California Electric Homes Program (CalEHP) provides incentives for the construction of all-electric market-rate residential buildings and installation of energy storage systems to encourage deployment of near-zero-emission building technologies. For more information visit the **CalEHP webpage**.

IRA Rebate Program in CA

The federal Inflation Reduction Act (IRA) includes two residential energy rebate programs and funding for contractor training grants related to these programs. More than $582 million is anticipated to be allocated to California for the whole-house Homeowner Managing Energy Savings (HOMES) rebate program and the point-of-sale High-Efficiency Electric Home Rebate (HEEHRA) program. For more information visit the **IRA Residential Energy Rebate Programs in California webpage**.

For additional help with the Energy Code, see Energy Code Ace's **online offerings** of trainings, tools, and resources.

Q&A

Single-Family Unconditioned Spaces

Do the Energy Code requirements apply to detached unconditioned buildings on residential lots?

Yes. Per the Energy Code scope in **§ 100.0(c)** all unconditioned spaces must comply with the lighting requirements of Part 6. Other single-family requirements of the Energy Code generally do not apply to detached unconditioned buildings on a residential lot.

However, attached unconditioned spaces that separate conditioned spaces from unconditioned spaces, such as attics, garages, crawl spaces, utility rooms, etc., will need to meet the Energy Code requirements.

Nonresidential Fenestration NA6 Calculations

Are the fenestration default calculations in Reference Nonresidential Appendix NA6 only for skylights per § 110.6 of the 2022 Energy Code?

Yes. The NA6 default calculations are only for new, altered, and replacement skylights in nonresidential buildings. Skylights with less than 200 square feet of area may use the NA6 default calculations for U-factor, solar heat gain coefficient (SHGC), and visible transmittance (VT) per **§ 110.6**. Vertical windows in nonresidential buildings may not use the NA6 calculations.

Default Values for Doors

Can a default label be used for an exterior door that is not rated by the National Fenestration Rating Council (NFRC)?

Yes. The U-factor values for an unrated exterior door default label can be found in the **Reference Joint Appendix JA4.5 Table 4.5.1**. Figure 2.

The CEC welcomes feedback on Blueprint. Please contact the editor at **Title24@energy.ca.gov**

Table 4.5.1 – Doors

Description		U-factor
		A
Uninsulated single-layer metal *swinging doors* or *non-swinging doors*, including single-layer uninsulated access hatches and uninsulated smoke vents:	1	1.45
Uninsulated double-layer metal *swinging doors* or *non-swinging doors*, including double-layer uninsulated access hatches and uninsulated smoke vents:	2	0.70
Insulated metal *swinging doors*, including fire-rated *doors*, insulated access hatches, and insulated smoke vents:	3	0.50
Wood *doors*, minimum nominal thickness of 1-3/4 in. (44 mm), including panel *doors* with minimum panel thickness of 1-1/8 in. (28 mm), and solid core flush *doors*, and hollow core flush *doors*:	4	0.50
Any other wood *door*:	5	0.60
Uninsulated single layer metal *roll up doors* including fire rated *door*	6	1.45
Insulated single layer metal *sectional doors,* minimum insulation nominal thickness of 1-3/8 inch; expanded polystyrene (R-4 per inch).	7	0.179
Source: ASHRAE 90.1-2007, Section A7.		

Figure 2: JA4 Table 4.5.1 Door default values

FOR MORE INFORMATION

Online Resource Center (ORC): www.energy.ca.gov/orc

Home Energy Rating System (HERS): www.energy.ca.gov/HERS

Acceptance Test Technician Certification Provider Program (ATTCP): www.energy.ca.gov/ATTCP

2022 Approved Compliance Software: https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-1

EDITOR

Amie Brousseau

SPECIAL THANKS

Che Geiser
Chris Olvera
Michael Shewmaker
Michael J. Sokol
Will Vicent
Lorraine White

Building Standards Branch

715 P Street
Sacramento, CA
95814

CALIFORNIA ENERGY COMMISSION

CEC-400-2023-010