



Use this checklist when the project:

- Replaces, or adds to, the existing water-heating system – with another system of the same or different type – and nothing more.

* This checklist is not intended to support projects in which the enforcement agency requires building design plans and specifications to be submitted with the application for a building permit.

ESSENTIALS

1. Does the project trigger California’s Building Energy Efficiency Standards (Energy Code or Title 24, Part 6)?

YES NO

- The project triggers the Energy Code if the home’s existing water-heating system is being replaced.

2. Does it meet the Mandatory Energy Code requirements?

YES NO

- The water-heating system must meet Mandatory federal and state efficiency regulations (see FAQ section for link to approved systems).
- All newly installed and existing accessible domestic hot water (DHW)^A pipes must be insulated per §609.12 of the California Plumbing Code.

3. Does it meet the Energy Code’s requirements under the Prescriptive Approach?

YES NO

- If the water-heating system includes a recirculation system, only demand recirculation systems with manual on/off controls shall be installed prescriptively (see Title 24, Part 6, Residential Reference Appendix RA4.4.9).
- Specific Prescriptive requirements depend on the type of existing and proposed water-heating system

Existing Water-heating System	Prescriptively Allowed Proposed Water-heating System
Gas (Natural Gas or Propane) Tank or Tankless, Heat Pump Storage Tank	Gas Tank or Tankless ^B , Heat Pump Storage Tank ^C
Electric Resistance Tank or Tankless	Gas Tank or Tankless ^B , Heat Pump Storage Tank ^C , Electric Resistance Tank or Tankless ^D

4. Are the necessary Prescriptive forms included with the permit application?

YES NO

If the project...	Include this form:
Replaces an existing water-heating system only	CF1R-ALT-05-E: Certificate of Compliance for Alterations (Non-HERS)

A – D See page 3 for notes.

Water-heating System Changes, HERS Measures and Required Documentation

The permit applicant wants to change to a different fuel source for the new DHW system. Is this allowed using the Prescriptive Approach?

- It is possible to change to a different fuel source and still comply prescriptively, but the type of change allowed will depend on the existing fuel source. A gas tankless, gas storage tank or heat pump storage tank water heater can always be installed prescriptively.
- If using the Prescriptive Approach, an electric resistance water heater can **only** replace an existing electric resistance water heater, never a gas or heat pump water heater.
- [The Energy Commission's "Water Heater Alterations Guide" further clarifies this requirement.](#)

Can the permit applicant install an additional water heater in the existing home using the Prescriptive Approach?

- No, the Performance Approach must be used instead of the Prescriptive Approach to show compliance for an additional water heater in an existing home, unless the added water heater is for an Addition.

Are Certificates of Compliance (CF1R forms) really required for a new water heater?

- Some enforcement agencies may, at their discretion, choose **not** to require compliance documents for Prescriptive residential Alteration projects that do **not** require Home Energy Rating System (HERS) verification. Even so, exemptions from submitting compliance documentation shall not be deemed to grant authorization for any work to be done in any manner in violation of this code or other provisions of law. See §10-103(a)1C for more information.

Does a water-heating system replacement require Home Energy Rating System (HERS) verification?

- No, if the project is submitting via the Prescriptive Approach for a single-family home (using the CF1R-ALT-05-E), it does not trigger HERS measures.
- If it is submitting via the Prescriptive Approach for an Addition (CF1R-ADD) or the Performance Approach (CF1R-PRF) and any HERS measures are required for the scope of work, then all forms must be registered with a HERS provider.

What forms does the building inspector require?

- In addition to the CF1R-ALT-05-E submitted with the permit application, the inspector looks for the CF2R-ALT-05-E: Certificate of Installation for Prescriptive Alterations (Non-HERS) which is completed by the installing contractor.
- Also, for most projects, the inspector checks any water heater product labeling and the CF2R to confirm they meet the required values specified on the CF1R. The inspector also verifies that pipe insulation has been installed as required.

Prescriptive or Performance Approach

What do you mean by "Performance Approach" to compliance?

- The Performance Approach uses approved modeling software to "trade off" energy efficiency measures. This means that you can do "worse" than Prescriptive requirements for some things and "better" than Prescriptive for others, as long as the Mandatory requirements are met and the energy budget balances. The proof of energy budget balance is documented via the CF1R-PRF-01-E report. This may be considered if the project cannot meet the Prescriptive requirements for a water heater changeout supported by this checklist.

Confirming Water Heater Compliance with Federal and State Regulations

Where can permit applicants find out whether a particular make and model of water heater is compliant with Mandatory federal and state appliance efficiency regulations?

- All appliances regulated under Title 20 must be certified to the California Energy Commission via its MAEDbS™ database (Modernized Appliance Efficiency Database System). The general public can access this database directly at: cacertappliances.energy.ca.gov/.



Notes

- A** "Domestic Hot Water" is potable hot water that is consumed for domestic purposes including food preparation, cleaning and personal hygiene.
- B** If the newly installed tankless unit exceeds 6.8 kBtuh (2 kW), isolation valves and other fittings such as hose bibs are required for both the cold and hot water piping leaving the water heater.
- C** The Prescriptive Approach allows for one electric heat pump water heater meeting either of the following conditions:
- The unit is rated "NEEA Tier 3" or higher.
 - If the unit is **not** rated "NEEA Tier 3" or higher, the storage tank must not be located outdoors and must be placed on a rigid insulated surface with a minimum thermal resistance of R-10. The water heater must be installed with a communication interface that either meets the requirements of §110.12(a) or has an ANSI/CTA-2045-B communication port.
- D** Replacing an existing consumer electric water heater (tank or tankless) with another of the same type is allowed using the Prescriptive Approach. Electric resistance (tank or tankless) water heaters may only replace gas or heat pump water heaters if shown to comply using the Performance Approach.



For More Information

CALIFORNIA ENERGY COMMISSION

www.energy.ca.gov

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

2022 Building Energy Efficiency Standards

bit.ly/CEC2022Standards

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

2022 Building Energy Efficiency Standards Summary

bit.ly/CEC2022Summary

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

2022 Reference Appendices

bit.ly/ECA-2022-reference-appendices

View the Joint, Residential and Nonresidential Appendices here.

2022 Energy Code Residential Compliance Manual, Chapter 5 – Water-heating Requirements

bit.ly/CEC-2022-SF-residential-compliance-manual

Modernized Appliance Efficiency Database System (MAEDbS)

bit.ly/MAEDbS

Search this database to find products that comply with the Energy Code

Energy Code Hotline

Call: 1-800-772-3300 (Free)

Email: Title24@energy.ca.gov

Online Resource Center

bit.ly/CEC-ORC

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



EnergyCodeAce.com

Stop by this online "one-stop-shop" for no-cost tools, training and resources designed to help you comply with California's Title 24, Part 6 and Title 20.



Tools

energycodeace.com/tools

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

Reference Ace

energycodeace.com/content/tools-ace-reference-ace

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

Forms Ace

energycodeace.com/content/tools-ace-forms-ace

Find the forms that apply to your specific project.

Energy Code Product Finder

energycodeace.com/content/product-finder

Find Title 24, Part 6-compliant products.

Q&Ace

energycodeace.com/QAndAce

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



Training

energycodeace.com/training

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



Resources

energycodeace.com/resources

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

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



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