

California's Building Energy Code (also known as Title 24, Part 6) enables homeowners to save on their electricity and natural gas bills - and by reducing greenhouse gas emissions, helps the environment. If your home needs to be repaired or rebuilt, you may need to comply with this code. This fact sheet includes basic information on the code, but please contact us at info@energycodeace.com if you would like additional assistance.

When is the Building Energy Code Triggered?

Alteration: The home is damaged and part(s) of the home require reconstruction (e.g., new roof being installed to replace a damaged roof).

Addition: The home is being added onto, and the habitable floor area increases (e.g., adding a new family room to the back of an existing house).

New Home: The home must be completely rebuilt.

What Doesn't Trigger the Building Energy Code?

A **repair** does not trigger the Building Energy Code. This is the reconstruction of a building component that does not increase the preexisting energy consumption of that repaired feature. For example, replacing glass in a window is a repair, but replacing the glass and framing of a window is considered an alteration.



Alterations

Envelope: All walls, floors and roofs must be insulated (even if not previously installed) when opened up (made accessible), or rebuilt in the same exact location, to the minimum insulation requirements of the Building Energy Code. New roofing may need to be a Cool Roof Rating Council (CRRC)-certified cool roof product depending on where the home is located (climate zones 10-15). Title 24, Part 6 Sections [150.0\(a-d\)](#)

Windows/Glass Doors/Skylights (Fenestration): Replaced fenestration totaling 75 ft² or more, must meet the same requirements of a new home, but if under 75 ft² is being replaced, there are some exceptions. Title 24, Part 6 Sections [150.0\(o\)/150.2\(b\)1A/B/G](#)

Heating/AC/Ventilation (HVAC)/Water Heater: Replaced mechanical system type(s) can match what was there before. New or replaced heating and/or cooling systems require a third-party HERS Rater to test and verify that certain components were installed properly. Title 24, Part 6 Sections [150.0\(h-j\)\(m-o\)/150.2\(b\)C-F](#)

Lighting: Replaced or new lighting must be "high efficacy," which is essentially fluorescent technology or LED that meets quality control requirements (Title 24 Reference Joint Appendix JA8). No screw-based recessed can lights are allowed. In addition, there are simple lighting control requirements. The lighting requirements apply equally to alterations, additions and new construction. Title 24, Part 6 Section [150.0\(k\)](#)



Addition

Envelope: All new walls, floors and roofs must meet similar requirements of a new home, but with some exceptions dependent on the square footage of the addition or if considered an "extended" wall. Title 24, Part 6 Sections [150.2\(a\)1 and 2](#)

Windows/Glass Doors/Skylights (Fenestration): There are performance requirements of fenestration product, such as U-Factor (resistance to heat transfer) and SHGC (Solar Heat Gain Coefficient, the ability to limit heat gain into the home from the sun). In addition, there are limitations to the amount of fenestration being used, dependent on the square footage of the addition. Title 24, Part 6 Section [150.2\(a\)](#)

HVAC/Water Heater: New HVAC system(s) have the same requirements as those being installed in a new home. A new tankless gas water heater (minimum efficiency) may be added as part of an addition (exceptions may apply). Title 24, Part 6 Sections [150.0\(h-j\)\(m-o\)/150.2\(a\) and \(b\)](#)

Lighting: New lighting has the same requirements for all project types. Title 24, Part 6 Section [150.0\(k\)](#)



New Home

Envelope: New roof, wall and floor requirements will most likely exceed the building requirements in which the existing home was built. Title 24, Part 6 Section 150.1(c)

Attics: Most areas in California have “high performance” attic requirements which typically means insulation placed on the ceiling AND another layer of insulation at the roof. Title 24, Part 6 Section 150.1(c)1A

Walls: Most areas in California have “high performance” wall requirements which typically means 2”x 6” wood framing using R-19 insulation and an additional 1” of rigid insulation outside the framing. Title 24, Part 6 Section 150.1(c)1B

Fenestration: New fenestration requirements dictate using National Fenestration Rating Council (NFRC)-rated dual-paned vinyl/wood/fiberglass products using Low-E³ glazing. In addition, there are limitations on the amount used in home. Title 24, Part 6 Section 150.1(c)3-4

HVAC/Water Heater: HVAC system(s) will require third-party testing by a HERS Rater to verify certain components of the system(s). One gas tankless water heater meeting minimum efficiency. Title 24, Part 6 Sections 150.1(c)6-10 and 12-13

Lighting: New lighting has the same requirements for all project types. Title 24, Part 6 Section 150.0(k)



What methods can be used to show compliance with the Building Energy Code?

In addition to mandatory measures (which must always be met), there are two methods:

1. Prescriptive Method: All code requirements can be met or exceeded. Forms used:
 - Alterations: CF1R-ALT-01 through 04-E (or the CF1R-ALT-05-E if no HERS measures)
 - Additions: CF1R-ADD 01-E (or the CF1R-ADD-02-E if no HERS measures)
 - New Home: CF1R-NCB-01-E
2. Performance Method: Flexibility is desired in place of the prescriptive code requirements.
 - CF1R-PRF-01-E is the form used for alteration/addition/new home.

For More Information

California Energy Commission Information & Services

Title 24, Part 6

- Energy Standards Hotline: 1-800-772-3300 (Free) or Title24@energy.ca.gov
- Online Resource Center: energy.ca.gov/title24/orc/
 - The Energy Commission’s main web portal for Energy Standards, including information, documents, and historical information
- Home Energy Rating System (HERS) Program Sub-site: energy.ca.gov/HERS/
- What is Your Home Energy Rating booklet energy.ca.gov/HERS/booklet.html
- California Building Climate Zone Map: energy.ca.gov/maps/renewable/building_climate_zones.html

Additional Resources

- National Fenestration Rating Council (NFRC): nfr.org/
 - NFRC offerings can help facility managers, specifiers, designers and others make informed purchasing and design decisions about fenestration products
- CRRC-Rated Products Directory: coolroofs.org/products/results
 - Search for rated roofing products

- Energy Code Ace: EnergyCodeAce.com
 - An online “one-stop-shop” providing free resources and training to help appliance and building industry professionals decode and comply with Title 24, Part 6 and Title 20. The site is administered by California’s investor-owned utilities.

Of special interest:

Application Guides

- Residential Envelope and Solar Ready Areas
 - Residential HVAC and Plumbing
 - Residential Lighting
- energycodeace.com/content/resources-ace/file_type=application-guide

Fact Sheets

- Nonresidential & Residential Permit Process 2016
- Just the Basics: HERS for Residential and Nonresidential Projects
- Quick Reference Sheet: HERS for Residential and Nonresidential Projects 2016
- Quick Reference Sheets for Climate Zone Compliance Baselines
- Residential Cool Roofs
- Residential Domestic Hot Water (DHW)
- Residential Fenestration
- Residential HVAC Alterations
- Residential Lighting
- Residential Opaque Envelopes
- Title 20 Residential Pool Pump Motors

energycodeace.com/content/resources-fact-sheets/

Trigger Sheets

- Residential HVAC Alterations

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