



CITY OF PERRIS

DEVELOPMENT SERVICES DEPARTMENT

BUILDING AND SAFETY DIVISION

135 N. "D" Street, Perris, CA 92570-2200

TEL: (951) 443-1029 FAX: (951) 943-3293

Residential Addition – California Energy Requirements

(Based on Package D of the 2005 Ca. Energy Efficiency Standards for Climate Zone 10)

The attached forms may be used to determine the minimum level of energy compliance required for a residential addition. These forms can be used for both raised floor and slab floor additions. In order to use these forms, compliance with all of the requirements as listed under the appropriate square footage columns and categories is required. If compliance with **all** of these requirements is not desirable, the energy compliance documentation for this project will need to be prepared by an energy consultant.

If all of the energy features listed under the appropriate square footage columns and categories are applicable to this project, please fill in the information of the designer or owner under Compliance Statement and reproduce this information onto the plan sheets for this addition.

**2005 California Energy Efficiency Standards
Certificate of Energy Efficiency Standards - Prescriptive Method for Climate Zone 10**

Project Address: _____ **Addition Floor Area:** _____

COMPONENTS	Up to 100 S.F.	101-499 S.F.	500-999 S.F.	1000 S.F. & above
Building Envelope:				
Ceiling Insulation	R-19	R-30	R-30	R-30
Wall Insulation	R-13	R-13	R-13	R-30
Floor Insulation ⁽¹⁾	R-12-13	R-19	R-19	R-19
Radiant Barrier ⁽²⁾	N/A	REQ	REQ	REQ
Fenestration (Glazing):				
U-Factor	0.57	0.57	0.57	0.57
Total or % of CFA ⁽³⁾	50 S.F. ^{(4) (†)}	20% + removed ^{(5) (†)}	20% + removed ^{(5) (†)}	20% ^{(4) (†)}
Solar Heat Gain Coefficient (SHGC):	0.40	0.40	0.40	0.40

Footnotes:

- ¹ Slab floors are exempt from this requirement.
- ² New roof sheathing for additions greater than 100 S.F. will require the installation of a “**certified radiant barrier**” facing the attic space of the addition.
- ³ CFA = conditioned floor area.
- ⁴ This compliance approach does not allow square footage credit for the glazing removed.
- ⁵ The area of any fenestration (glazing) removed from the existing dwelling because of the addition.
- [†] West exposure is limited to 5% maximum

Space Heating: No new electric resistance space heating systems are allowed.
If new heating and/or cooling systems or ducts are to be installed see requirements on the next page under New Heating and/or Cooling Systems.

Water Heating: 50 gallon maximum with a minimum thermal efficiency of 80%.

Mandatory Features and Devices (See Section 150 of the 2005 Energy Efficiency Standards for specific details):

1. Insulation specified or installed shall meet the California Energy Commission quality standards.
2. Fenestration products, exterior doors, and infiltration controls:
 - a. Doors and windows between conditioned and unconditioned spaces shall be designed to limit air leakage.
 - b. Manufactured fenestration products must have a label with the certified U-factor, solar heat gain coefficient (SHGC) and air leakage requirements.
 - c. Exterior doors and windows shall be weather-stripped: all joints and penetrations shall be caulked and sealed.
3. Installations of fireplaces, decorative gas appliances, and gas logs:
 - a. Masonry and factory-built fireplaces shall have:
 1. Closeable metal or glass doors covering the entire opening of the firebox.
 2. Outside air intake with a readily accessible damper or combustion-air control device.
 3. A Flue damper with a readily accessible control.
 - b. No continuous burning gas pilot lights allowed.
4. Showerheads and faucets shall be certified by the California Energy Commission.
5. Household cooking appliance are to have no continuously burning pilot lights (*exception: non-electrical cooking appliances with a pilot light of less than 150Btu/Hr*).
6. Ducts and fans:
 - a. All air-distribution ducts and plenums are to be constructed, installed, insulated, fastened, and sealed to comply with the 2001 California Mechanical Code (based on the 2000 Uniform Mechanical Code) sections 601, 603, 604 and standard 6-3; ducts conveying conditioned air are to be insulated to a minimum installed R-Value of 6 (R-6) or ducts are to be enclosed entirely within conditioned space (space in a building that is either directly or indirectly conditioned). Openings shall be sealed with mastic, tape (cloth back rubber adhesive duct tape alone is not allowed), aerosol sealant or other duct closure systems that meet the applicable requirements of UL181, UL181A, or UL181B and other applicable specified tests for longevity given in section 150(m).
 - b. Exhaust fans shall have a back draft or automatic damper.

7. Lighting Measures:

a. Section 150 (k) 1: High Efficacy Luminaires¹: High Efficacy Luminaires for residential lighting shall contain only high efficacy lamps and shall not contain a medium screw base socket (E24/E26). A high efficacy lamp has a lamp efficacy that is no lower than the efficacies contained in TABLE 150-C¹. Ballasts for lamps rated 13 Watts or greater shall be electronic² and shall have an output frequency no less than 20 kHz.

EXCEPTION: High intensity discharge luminaires containing hardwired electromagnetic ballasts³ in medium screw base sockets shall be considered high efficacy luminaires for the purposes of meeting Section 150 (k) 6, provided they meet the efficacies contained in TABLE 150-C.

NOTE: To determine the minimum lamp efficacy category only the watts of the lamp (not the ballast) are to be considered.

b. Section 150 (k) 2: Light in Kitchens: Permanently installed luminaires in kitchens shall be high efficacy luminaires.

EXCEPTION: Up to 50 percent of the total rated wattage of permanently installed luminaires in kitchens may be luminaires that are not high efficacy luminaires, provided that these luminaires are controlled by switches separate from those controlling the high efficacy luminaires. The wattage of high efficacy luminaires shall be the total nominal rated wattage of the installed high efficacy lamp(s). The wattage of luminaires shall be determined as specified by section 130 (c).

c. Section 150 (k) 3: Lighting in Bathroom, Garage, Laundry Rooms, and Utility Rooms: Permanently installed luminaires in bathroom, garages, laundry rooms, and utility rooms shall be high efficacy.

EXCEPTION: Permanently installed luminaires that are not high efficacy shall be allowed provided that they are controlled by an occupant sensor(s) certified to comply with Section 119 (d). Such motion sensors shall not have a control that allows the luminaire to be turned on automatically or that has an override allowing the luminaire to be always on.

d. Section 150 (k) 4: Lighting other than in Kitchens, Bathrooms, Garages, Laundry Rooms, and Utility Rooms.

Permanently installed luminaires located other than in kitchens, bathrooms, garages, laundry rooms, and utility rooms shall be high efficacy luminaires.

EXCEPTION 1: Permanently installed luminaires that are not high efficacy luminaires shall be allowed provided they are controlled by a dimmer switch.

EXCEPTION 2: Permanently installed luminaires that are not high efficacy luminaires shall be allowed provided they are controlled by an occupant sensor(s) certified to comply with Section 119 (d). Such motion sensors shall not have a control that allows the luminaire to be turned on automatically or that has an override allowing the luminaire to be always on.

EXCEPTION 3: Permanently installed luminaires that are not high efficacy luminaires shall be allowed in closets less than 70 square feet.

NOTE: Lighting in areas adjacent to the kitchen, including but not limited to dining and nook areas, are considered kitchen lighting if they are not separately switched from kitchen lighting.

e. Section 150 (k) 5: Recessed Luminaires in Insulated Ceilings. Luminaires recessed into insulated ceilings shall be approved for zero clearance insulation cover (IC) by Underwriters Laboratories or other testing/rating laboratories recognized by the International Code Council, and shall include a label certifying air tight (AT) or similar designation to show air leakage less than 2.0 CFM at 75 Pascals (or 1.57 lbs/ft²) when tested in accordance with ASTM E283, and shall be sealed with a gasket or caulk between housing and ceiling.

f. Section 150 (k) 6: Outdoor Lighting. Luminaires providing outdoor lighting and permanently mounted to a residential building or to other buildings on the same lot shall be high efficacy luminaires.

EXCEPTION 1: Permanently installed outdoor luminaires that are not high efficacy shall be allowed provided that they are controlled by a motion sensor(s) with integral photo control certified to comply with Section 119 (d).

EXCEPTION 2: Permanently installed luminaires in or around swimming pools, water features, or other locations subject to Article 680 of the California Electric code need not be high efficacy luminaires.

Footnotes:

¹ **High Efficacy Luminaires are those that produce 40 lumens per watt at 15 watts or less; 50 lumens per watt over 15 watts up to 40 watts; 60 lumens per watt over 40 watts. (This information is reproduced from Table 150-C).**

² **Electrical Ballasts have a four pin design and do not flicker.**

³ **Magnetic Ballasts have a two pin design and can produce a flicker.**

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New Heating and/or Cooling Systems:

If new heating and/or cooling systems or ducts are to be installed, they must meet the requirements listed below:

1. New heating equipment must have an annual fuel utilization efficiency (AFUE) rating of not less than 90%. When new air ducts are installed in additions **over 100 square feet** a "home energy rating system (HERS) rater" will be required for field verification and diagnostic testing for duct air leakage.
2. New cooling equipment must have a seasonal energy efficiency rating (SEER) of 13 or higher and minimum duct insulation of R-6. Refrigerant charge and airflow measurement or a thermostatic expansion valve (TXV) must be installed on the ducted split system central air conditioner or the ducted split system heat pump and must be confirmed through field verification and diagnostic testing per the procedures and specifications contained in the Alternative Calculation Method (ACM) Approval Manual by a certified home energy rating systems (HERS) rater.
3. An automatic setback thermostat shall be installed on all heating and or cooling systems. Gravity heaters and room air-conditioners are exempt.

Note: The home energy rating system (HERS) rater will certify the system and complete the CF-4R form. The equipment installer shall complete the CF-6R form. For information regarding the home energy rating system (HERS) rater, contact the California Home Energy Efficiency Rating System (CHEERS) at, 9400 Oakdale Ave., Chatsworth, CA. 91311; phone 1-800- 424-3377 or www.CHEERS.org .

Alternative to the HERS duct testing and refrigerant charge and air flow measurement or the installation of the thermostatic expansion valve (TXV):

Note: As an alternative under Package D, glazing with a maximum 0.38 U-Factor and maximum 0.31 solar heat gain coefficient (SHGC) and an 13.0 SEER space-cooling system can be substituted for duct sealing and either the refrigerant charge and airflow measurement or the thermostatic expansion valve (TXV). All other requirements of Package D must be met.

Compliance Statement:

This certificate of compliance lists the building features and performance specifications needed to comply with Title 24, Parts 1 & 6, of the California Code of Regulations and the Administrative Regulations to implement them. This certificate has been signed by the individual with overall design responsibility.

Designer or Owner:

Name: _____	Title/Firm: _____
Address: _____	Telephone: _____
Signature: _____	Date: _____