

Title 24, Part 11 Green Building Standards

The following text shall replace all existing text in the Energy Efficiency Divisions of the Voluntary Measure Appendices in the 2010 CALIFORNIA GREEN BUILDING STANDARDS CODE.

APPENDIX A4 - RESIDENTIAL VOLUNTARY MEASURES

DIVISION A4.2 ENERGY EFFICIENCY

Newly constructed low-rise residential buildings shall meet Sections 1 and 2:

1. **Prerequisites.** Each of the following efficiency measures is required:

- A. **Home Energy Rating System (HERS) Design Rating.** A HERS design rating shall be computed by Compliance Software certified by the Commission for the Proposed Design Building and this rating shall be included in the Certificate of Compliance documentation;
- B. **Quality Insulation Inspection (QII).** The QII procedures specified in Title 24, Part 6 shall be completed;
- C. **High efficacy indoor lighting.** All permanently installed indoor lighting shall be high efficacy as defined in and controlled as required by Title 24, Part 6. Permanently installed lighting shall be installed in kitchens, bathrooms, utility rooms, and garages at a minimum. Every room which does not have permanently installed lighting shall have at least one switched receptacle installed;
- D. **High efficacy exterior lighting.** All permanently installed exterior lighting mounted to the building shall be high efficacy as defined in and controlled as required by Title 24, Part 6.
- E. **Maximum Hot Water Pipe Volume.**
 - (1) **Hot Water Distribution Systems without Recirculation:** The maximum volume of water contained in hot water distribution pipe between the water heater and any fixture fitting shall not exceed 32 ounces. Exception: Branches serving bathtubs without showers.
 - (2) **Hot Water Distribution Systems with Recirculation:** The maximum volume of water contained in each branch between the recirculation loop and a fixture fitting shall not exceed 16 ounces. Exception: Branches serving bathtubs without showers.

2. **Performance Standard.** One of the following advanced efficiency levels shall be met:

- A. **Tier I:** Buildings complying with the first level of advanced energy efficiency shall have an Energy Budget that is 85 percent or less than the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission. There shall be a limit on calculated total building electricity consumption placed on the Proposed Design Building within the Compliance Software that is equivalent to 10,000 kWh per year. A Proposed Design Building calculated by the Compliance Software to consume more than this amount of electricity shall use additional energy efficiency measures or an on-site solar electric system to reduce the Proposed Design Building calculated total building electricity consumption to a level that is at or below 10,000 kWh per year; or
- B. **Tier II:** Buildings complying with the second level of advanced energy efficiency shall have an Energy Budget that is 70 percent or less than the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission. There shall be a limit on calculated total building electricity consumption placed on the Proposed Design Building within the Compliance Software that is equivalent to 8,500 kWh per year. A Proposed Design Building calculated by the Compliance Software to consume more than this amount of electricity shall use additional energy efficiency measures or an on-site solar electric system to reduce the Proposed Design Building calculated total building electricity consumption to a level that is at or below 8,500 kWh per year.

Additions and alterations to low-rise residential buildings shall meet Sections 3 and 4:

3. **Prerequisites.** Each of the following efficiency measures is required if applicable to the addition or alteration building project:
 - A. **Quality Insulation Inspection (QII).** The QII procedures specified in Title 24, Part 6 shall be completed;
 - C. **High efficacy indoor lighting.** All permanently installed lighting shall be high efficacy as defined in and controlled as required by Title 24, Part 6. Permanently installed lighting shall be installed in kitchens, bathrooms, utility rooms, and garages at a minimum. Every room which does not have permanently installed lighting shall have at least one switched receptacle installed. Each ceiling fan provided by the builder shall be installed with an ENERGY STAR light kit; and
 - D. **High efficacy exterior lighting.** All permanently installed lighting mounted to the building shall be high efficacy as defined in and controlled as required by Title 24, Part 6.
4. **Performance Standard.** One of the following advanced efficiency levels shall be met:
 - A. **Tier I:** Buildings complying with the first level of advanced energy efficiency shall have an Energy Budget that is 95 percent or less than the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission for each mechanical system altered. Mechanical systems include heating, space cooling, and water heating systems. If the addition or alteration changes the envelope with no change to mechanical systems, then no additional efficiency measures above Part 6 are required; or
 - B. **Tier II:** Buildings complying with the second level of advanced energy efficiency shall have an Energy Budget that is 90 percent or less than the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission for each mechanical system altered. Mechanical systems include heating, space cooling, and water heating systems. If the addition or alteration changes the envelope with no change to mechanical systems, then no additional efficiency measures above Part 6 are required.

APPENDIX A5 - NONRESIDENTIAL VOLUNTARY MEASURES

DIVISION A5.2 ENERGY EFFICIENCY

Nonresidential, high-rise residential and hotel/motel buildings that include lighting and/or mechanical systems shall meet Sections 1 and 2.

1. **Prerequisites.** Each of the following efficiency measures is required for all applicable components of the building project:
 - A. **Outdoor Lighting.** The installed outdoor lighting power shall be equal to 90 percent or less than the Title 24, Part 6 calculated valued of allowed outdoor lighting power.
 - B. **Service Water Heating in Restaurants.** Restaurants 8,000 square feet or greater shall install either:
 - (a) A natural gas water heater with a minimum of 95 percent thermal efficiency; or
 - (b) A solar water-heating system with a minimum solar savings fraction of 0.15.
2. **Performance Standard.** One of the following advanced efficiency levels shall be met:
 - A. **Tier I:** Buildings complying with the first level of advanced energy efficiency shall have an Energy Budget that is 90 percent or less than the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission; or

B. **Tier II:** Buildings complying with the second level of advanced energy efficiency shall have an Energy Budget that is 80 percent or less than the Title 24, Part 6 Energy Budget for the Proposed Design Building as calculated by Compliance Software certified by the Energy Commission.
