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 EFFFICIENCY

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 lighting shall be high efficacy as defined in Title 24, Part 6 and shall have vacancy sensor controls. 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;

   D. **High efficacy exterior lighting.** All permanently installed lighting mounted to the building shall be high efficacy as defined in Title 24, Part 6 and shall have photocontrol or time clock controls; and

   E. **Appliance rating.** Each appliance provided by the builder shall be ENERGY STAR labeled if an ENERGY STAR specification is applicable for the appliance.

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 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 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 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 electricity consumption to a level that is at or below 8,500 kWh per year.

APPENDIX A5 - NONRESIDENTIAL VOLUNTARY MEASURES

DIVISION A5.2 ENERGY EFFFICIENCY

Nonresidential, high-rise residential and hotel/motel buildings shall meet Sections 1 and 2. Covered processes shall meet Section 1.A.

1. **Prerequisites.** Each of the following efficiency measures is required for all applicable components of the building project:

   A. **Commercial Refrigeration.**

      Retail food stores with 8,000 square feet or more of conditioned area, and that utilize either refrigerated display cases, or walk-in coolers or freezers connected to remote compressor units or condensing units, shall meet the requirements of Subsection (a).

      (a) **CO2 Indirect or Cascade Cooling Systems.** Cooling for all refrigerated display cases and walk-in coolers and freezers shall be provided using carbon dioxide (CO2), connected to compressors as a direct expansion refrigerant, or as a phase-change indirect cooling fluid.

      EXCEPTION 1 to Section (a): Stores with less than 20,000 square feet of sales area.

      EXCEPTION 2 to Section (a): Existing compressor systems that are reused for an expansion or remodel

      EXCEPTION 3 to Section (a): For the medium temperature display cases and coolers use of indirect glycol cooling including the following:

      i. Stores with a total medium temperature fixtures and walk-in cooling load of 360,000 BTU/Hr or greater shall have at least one glycol chiller designed with a glycol supply temperature no lower than 25°F.

      ii. Glycol supply pump(s) equipped with variable speed drives controlled based on glycol loop pressure differential and with two-way (no bypass) type control valves at cooling coils and display cases.

      iii. Variable speed control on walk-in cooling coil fans, utilizing speed control as primary temperature control before cycling glycol supply valves, with minimum fan speed no greater than 70%.

      EXCEPTION 4 to Section (a): Direct expansion systems using a Low-GWP Refrigerant.

      EXCEPTION 5 to Section (a): Self-contained refrigerated display cases.

   B. **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.

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.