

## CALIFORNIA ENERGY COMMISSION

## BLUEPRINT

## EFFICIENCY DIVISION

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**CBECC-Res 2013  
Version 4**

At the May 13, 2015 California Energy Commission (Energy Commission) Business Meeting, CBECC-Res 2013 Version 4, was approved to be used to demonstrate performance compliance with the residential provisions of the 2013 Building Energy Efficiency Standards (Energy Standards).

New features include:

- Improved compliance processing speed;
- Dedicated boilers for hydronic space heating;
- Refrigerant charge test for ductless (mini-split) heat pumps;
- Notes for documentation and notes to be printed on the CF1R;
- Insulated roof tile systems modeling; and
- Ducts located in specific types of attics.

Version 4 also corrects several software bugs and reporting errors primarily relating to:

- Additions and alterations modeling and HERS reporting issues;
- HERS reporting errors for mini-splits and for ductwork under certain conditions; and
- Water heating assumptions for ground source heat pumps.

All permit applications submitted on or after August 1, 2015, which use CBECC-Res to demonstrate compliance, must use CBECC-Res 2013 Version 4.

For additional information on approved computer compliance programs, please visit:

[http://www.energy.ca.gov/title24/2013standards/2013\\_computer\\_prog\\_list.html](http://www.energy.ca.gov/title24/2013standards/2013_computer_prog_list.html).

**New HVAC  
Ambassador Program**

The Contractors State License Board (CSLB) has recently launched a new initiative focused on heating ventilation and air conditioning (HVAC) system installations across the state. The HVAC Ambassador Program offers and promotes information on the proper steps for installation of an HVAC system for C-20 contractors. The program is also useful for consumers interested in knowing more about obtaining competitive contractor bids and any required work permits for their HVAC project. Licensed contractors can educate consumers, with forms supported by the CSLB, about the advantages and risks of having permitted versus unpermitted work done. The HVAC Ambassador Program webpage contains sample letters and checklists that protect

both contractors and consumers.

To review or download the HVAC Ambassador Program packet, please visit:

[http://www.cslb.ca.gov/Contractors/HVAC\\_Ambassador\\_Program.aspx](http://www.cslb.ca.gov/Contractors/HVAC_Ambassador_Program.aspx).

The Energy Commission also offers free resources regarding HVAC changeout work. Interested parties can print and distribute information that promotes code compliance and proper installation of HVAC systems at:

<http://www.energy.ca.gov/title24/2013standards/changeout/>.

## NLCAA Lighting Controls Certificates of Acceptance

On February 25, 2015, the Energy Commission authorized Rob Oglesby, the Executive Director of the Energy Commission, to approve, under [Section 10-103\(a\)4A](#) of the Energy Standards, alternative Certificate of Acceptance compliance documentation developed by Commission-approved Acceptance Test Technician Certification Providers (ATTCP), that conform to the format, informational order, and content of Certificates of Acceptance previously approved by the Energy Commission.

On March 11, 2015, the Executive Director of the Energy Commission, approved the use of four third-party Certificate of Acceptance compliance documents; NRCA-LTI-02, NRCA-LTI-03, NRCA-LTI-04 and NRCA-LTO-02, developed by the

National Lighting Contractors Association of America (NLCAA), a Commission-approved Lighting Controls ATTCP.

All agencies with the authority to issue building permits may accept NLCAA's third-party Certificates of Acceptance NRCA-LTI-02, NRCA-LTI-03, NRCA-LTI-04, and NRCA-LTO-02 to certify compliance with the lighting controls acceptance testing requirements of [Section 130.4](#) of the Energy Standards.

For more information on the ATTCP program, please visit the Energy Commission's website at:

<http://energy.ca.gov/title24/attcp/>.

## Improved Mechanical Compliance Document

The ventilation worksheet for compliance document NRCC-MCH-03-E has been updated to calculate the required ventilation airflow when demand controlled ventilation (DCV) and carbon dioxide (CO<sub>2</sub>) sensors are used. This updated document is available on the Energy Commission's website at:

<http://www.energy.ca.gov/title24/2013standards/>.

The calculation complies with [Section 120.1\(b\)2](#) of the 2013 Energy Standards. For more information about the ventilation requirements for nonresidential, high-rise residential, and hotel/motel buildings, please see [Section 4.3](#) of the 2013 Nonresidential Compliance Manual.

## Q&A

### Performance Compliance Approach

**For nonresidential alterations utilizing the performance compliance approach, [Section 141.0\(b\)3B](#) states,**

*“When the third party verification option is specified, all components proposed for alteration must be verified.”*

**Does this mean that all altered components must undergo third party verification?**

[Section 141.0\(b\)3B](#) refers to the two options presented in [TABLE 141.0-D](#), allowing for a different standard design when third party verification of existing conditions is performed. The intent of this sentence is to state that all altered components for which compliance credit is being taken are subject to third party verification; the third party verification requirement does not apply to those altered components for which compliance credit is not being taken.

It is important to note that the third party verification option for nonresidential alterations has not been implemented or enforced for the 2013 Energy Standards. Existing conditions can be used for the standard design without third party verification at this time.

**Can I use the performance compliance approach for a residential alteration project that alters just one component (for example, a single window replacement)?**

No. The performance compliance approach is to be used only for projects that include tradeoffs (see [Section 150.2\(b\)2](#)). Trading off components is the practice of installing a component that is more efficient than the standard design to make up for a component that is less efficient than the standard design. At least two components must be altered to be eligible for a tradeoff. Components being traded off may consist of two or more of the same type of component, such as windows; or two or more different types of components, such as windows and insulation (see [TABLE 150.2-B](#)).

Information regarding performance compliance approach calculations can be found in the [2013 Residential Alternative Calculation Method Reference Manual](#).

## Lighting Controls

**Can tuning be used to satisfy the multi-level lighting control requirements for a luminaire modification-in-place?**

Tuning alone cannot satisfy the multi-level lighting control requirements in [TABLE 141.0-F](#) for a luminaire modification-in-place when using dimmable luminaires. The modified luminaires need to have a two level lighting control or a dimming control which allows the occu-

pant to dim the lighting through the controls steps listed in [TABLE 130.1-A](#).

A two level lighting control can be used if the lighting power is less than or equal to 85 percent of allowed lighting power per [Section 140.6](#). The two level lighting control must have a control step between 30 and 70 percent of the design lighting power. Tuning does not provide a lighting control step; it provides a preset/pre-adjusted light level with no ability for the occupant to control the lighting level.

The multi-level lighting control requirements in [Section 130.1\(b\)](#) must be met if the lighting power is greater than 85 percent of allowed lighting power per [Section 140.6](#). [Section 130.1\(b\)](#) requires indoor lighting to have control steps in accordance with [TABLE 130.1-A](#). This means that lighting should have a control to allow the dimming ranges or control steps listed in [TABLE 130.1-A](#). Using dimmable luminaires without having the control to dim through the ranges would not satisfy this requirement. Tuning does not provide the ability to control the lighting through the control steps of [TABLE 130.1-A](#).

**For a newly constructed parking structure over 10,000 ft<sup>2</sup>, are demand responsive controls required if only 500 ft<sup>2</sup> of the space within the parking structure (for example the elevator lobby) has a lighting power density of 0.5 W/ft<sup>2</sup> or greater?**

Spaces with a lighting power density of less than 0.5 W/ft<sup>2</sup> do not count towards the 10,000 ft<sup>2</sup> threshold for triggering demand responsive control requirements. Since there is only 500 ft<sup>2</sup> of space with lighting power density of 0.5 W/ft<sup>2</sup> or greater, demand responsive controls are not required (see [Section 130.1\(e\)](#)).

## Commissioning

**I am constructing a mixed occupancy building. The lower two stories of the building are for commercial/retail use and account for 25 percent of the conditioned floor area of the building. The remaining stories account for 75 percent of the conditioned floor area and are residential. Since the building is primarily residential, do I still need to have the building commissioned?**

Yes. However, the commissioning requirements of [Section 120.8](#) only apply to the nonresidential portions of the building. [Section 100.0\(f\)](#) requires the space for each occupancy to meet the applicable provisions of the Energy Standards for that occupancy.

**I am constructing a mixed occupancy building which has both residential and nonresidential spaces. The water heating system serves both the residential and nonresidential spaces of the building. Do I need to include the water heating system in the building commissioning?**

Yes. Since the water heating system is serving both residential and nonresidential spaces, the water heating system must be included in building commissioning as required by [Section 120.8](#).

**Is commissioning required for nonresidential buildings which have less than 10,000 ft<sup>2</sup> of conditioned space?**

Yes. However, for buildings less than 10,000 ft<sup>2</sup> only the design review ([Section 120.8\(d\)](#)) and commissioning measures shown in the construction documents ([Section 120.\(e\)](#)) need to be completed.

**Water Heating Requirements**

**I am installing a storage gas water heater at my residence. The water heater meets the new 2015 National Appliance Energy Conservation Act (NAECA) Standards. Am I required to wrap the water heater with R-12 insulation per the requirements of [Section 150.0\(j\)1A](#)?**

If the storage gas water heater meets the new 2015 NAECA Standards, it has an internal insulation of R-16, and therefore the water heater does not need to be wrapped with R-12 insulation.

The California Energy Commission welcomes your feedback on *Blueprint*. Please contact Andrea Bailey at [Title24@energy.ca.gov](mailto:Title24@energy.ca.gov).

**CALIFORNIA ENERGY COMMISSION**

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