

# BLUEPRINT

California Energy Commission  
Efficiency Division

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## New 2013 Lighting Alteration Compliance Option

On April 13, 2016, the California Energy Commission (Energy Commission) approved a new lighting alteration compliance option. This new option can be used to comply with **Section 141.0(b)21** of the *2013 Building Energy Efficiency Standards* (Energy Standards). This compliance option went into effect immediately.

To qualify for this 2013 compliance option, the lighting power of the existing luminaires to be replaced or modified must be reduced by the following percentages:

1. At least 50 percent in hotel, office, and retail spaces; or
2. At least 35 percent in all other spaces.

Spaces that satisfy these reduction of power criteria are subject only to the following control requirements:

1. The applicable manual area control requirements of **Section 130.1(a)**; and
2. The applicable automatic shut-off control requirements of **Section 130.1(c)1 through 5**.

The primary difference between the current requirements and this new compliance option is that the multi-level lighting control requirements are not applicable if the criteria above are met.

All other requirements and exceptions in the 2013 Energy Standards remain in place.

To use this compliance option, complete the **2016 NRCC-LTI-06-E** (Certificate of Compliance) to document the existing lighting power and to calculate the allowed lighting power. The calculated value must then be entered into the **2013 NRCC-LTI-01-E** (Certificate of Compliance), Table C, Row 6.

NOTE: This compliance option is only applicable to spaces which are not undergoing changes in area to the enclosed space, like moving interior walls.

For additional information on this compliance option, please see **Table 1**. The **staff analysis** is available for review.

## New All-in-One Certificates of Compliance for 2013 Nonresidential Lighting Projects

Two convenient Certificates of Compliance for indoor and outdoor nonresidential lighting projects are now available. The Energy Commission compiled five indoor lighting certificates to create the new NRCC-LTI certificate. The three outdoor lighting certificates were also compiled, creating the new NRCC-LTO certificate. These compiled certificates are especially useful for projects requiring the most frequently used certificates.

The compiled NRCC-LTI certificate includes:

- » Indoor Lighting (NRCC-LTI-01-E)
- » Lighting Controls (NRCC-LTI-02-E)
- » Power Allowance (NRCC-LTI-03-E)
- » Tailored Method (NRCC-LTI-04-E)
- » Line Voltage Track Lighting Worksheet (NRCC-LTI-05-E)

The compiled NRCC-LTO certificate includes:

- » Outdoor Lighting (NRCC-LTO-01-E)
- » Outdoor Lighting Controls (NRCC-LTO-02-E)
- » Power Allowances (NRCC-LTO-03-E)

The compiled certificates also include these user-friendly features:

- » Autofills referenced values (For example – Section C on LTI-01 is populated with the Allowed Lighting Power from LTI-03)
- » Specifies and adds tables for unconditioned spaces
- » Adds and deletes rows - Dynamic and expandable tables
- » Automatically provides allowed W/ft<sup>2</sup> from TABLES 140.6-B and C, based on the type of building or primary function area selection
- » Performs mathematical functions

Links to both certificates are located on the **Compiled Lighting Documents** webpage. The original certificates are available in the **archive**. For full functionality, use a current version of Adobe or another PDF viewer. Additional **troubleshooting** information is available.

## Porous Inner Core Flex Duct

### **Interpretation of Section 150.0(m)10**

The Energy Commission was asked to determine if porous inner core flex duct, with a non-porous layer between the inner core and outer jacket (see Figure 1), was compliant with **Section 150.0(m)10** of the Energy Standards.

Using the authority under Section 10-107(b), the Executive Director issued an **interpretation**, stating,

*“Flexible ducts having a non-porous layer between the porous inner core and the outer vapor barrier satisfies the intent of Section 150.0(m)10.”*

**Section 150.0(m)10** prohibits the use of porous inner core flex duct. This exclusion was first introduced in the 2005 Energy Standards. The prohibition was based on the perception that the outer jacket was the only air barrier. The presence of only one air barrier increases the potential for leakage during installation and throughout the life of the duct system. In an effort to minimize this risk, the porous inner core flex duct prohibition was adopted.

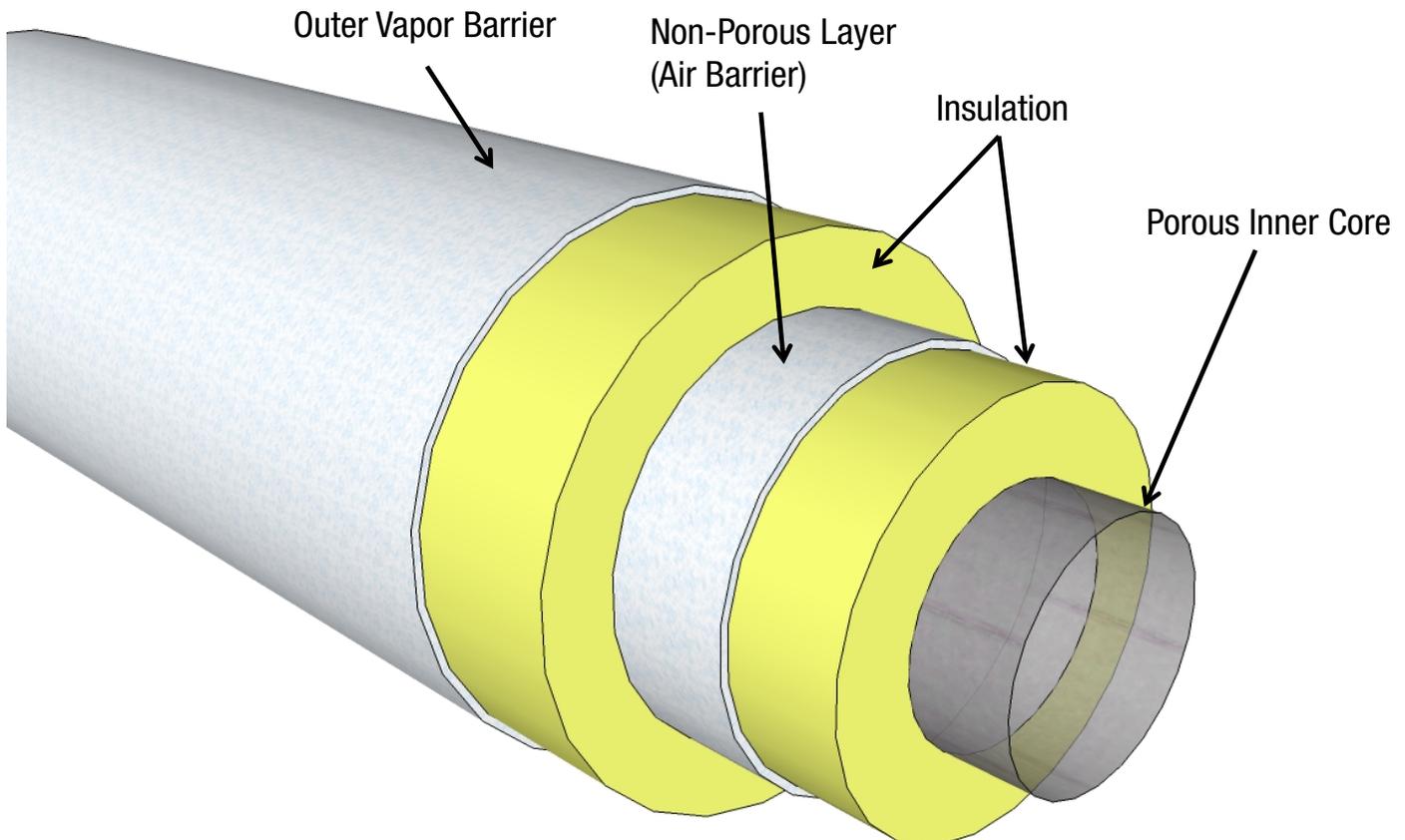


Figure 1 - Porous inner core flex duct with non-porous layer.

## Labeling of Products Used for Compliance with the Energy Standards

The Energy Commission and the State of California do not endorse, favor, or recommend any particular product or service. It is illegal for a manufacturer to use either entity's seal anywhere, including products, packaging, marketing materials, and websites. **Section 17533.6** of the California Business and Professions Code states,

*"It is unlawful for any person, firm, corporation, or association that is a nongovernmental entity to use a seal, emblem, insignia, trade or brand name, or any other term, symbol, or content that reasonably could be interpreted or construed as implying any federal, state, or local government, military veteran entity, or military or veteran service organization connection, approval, or endorsement of any product or service, including, but not limited to, any financial product, goods, or services, by any means, including, but not limited to, a mailing, electronic message, Internet Web site, periodical, or television commercial disseminated in this state, unless the nongovernmental entity has an expressed connection with, or the approval or endorsement of, a federal, state, or local government, military veteran entity, or military or veteran service organization."*



The Energy Commission does not certify products. Manufacturers certify their products to the Energy Commission. A product which has been certified by ENERGY STAR® does not automatically comply with the Energy Standards. It is inappropriate to place a "Title 24" or "Title 24-Compliant" label on a product. This applies even if the product is certified to the Energy Commission and is listed in the **Appliance Efficiency Database**.

The following are examples of acceptable statements that may be included on a product label or other marketing materials:

- » Can be used to comply with 2016 Title 24, Part 6 high efficacy luminaire requirements.
- » Can be used to comply with 2016 Title 24, Part 6 airtight requirements.
- » Can be used to comply with 2016 Title 24, Part 6 dimmer control device requirements.
- » Can be used to comply with 2016 Title 24, Part 6 cool roof requirements.

Please direct questions about product statements to the **Energy Standards Hotline**.

If you have a question about the use of the Energy Commission seal, please review the **Terms of Use** or contact the Media and Public Communications Office at 916-654-4989.



## Q&A

### Water Heater Replacement - Propane to Electric

**I currently have a propane water heater installed at my house. I want to replace it with an electric water heater. Can I do this prescriptively?**

Yes, as long as natural gas is not connected to the building. Propane is not considered natural gas. **Section 150.2(b)1Gi** states the following regarding replacement water heaters,

*"If no natural gas is connected to the building, an electric water heater that has an energy factor equal to or greater than required under the Appliance Efficiency Regulations. For storage type water heaters, the capacity shall not exceed 60 gallons."*

This also applies for replacement water heaters under **Section 150.2(b)1Giib** of the 2016 Energy Standards, which states,

*"If no natural gas is connected to the building, an electric water heater that meets the requirements of Section 110.1 and 110.3. For electric resistance storage type water heaters, the capacity shall not exceed 60 gallons."*

It is important to note that under the 2016 Energy Standards, the tank capacity limit does not apply to heat pump water heaters.

### Electrical Power Distribution and Guest Rooms

**Do any of the electrical power distribution system requirements of Section 130.5 apply to high-rise residential and hotel/motel guest rooms?**

Only the controlled receptacle requirements of **Section 130.5(d)5** are applicable to high rise residential and hotel/motel guest rooms.

To add clarity, **Section 130.0(b)4** of the 2016 Energy Standards was updated to reflect this.

Figure 2 - The State of California and Energy Commission seals must never be placed on a manufacturer's product.

# Lighting Alteration Compliance Option

Are projects which fall under the 2013 lighting alteration compliance option subject to the partial-off requirements of Section 130.1(c)6 and 7?

No. Since the multi-level control requirements are not applicable to these projects, the partial-off requirements are also not applicable (see Table 1).

NOTE: In these scenarios, spaces that would have otherwise been subject to the partial-off requirements are still subject to the automatic shut-off control requirements of Section 130.1(c)1 through 4.

If I am using the new compliance option for my lighting alteration project, is acceptance testing required?

Yes, acceptance testing is required for lighting alterations where controls are installed to comply with the 2013 Energy Standards. There are no exceptions under the 2013 Energy Standards.

Under the new compliance option, when are requirements triggered for lighting system alterations?

The same triggers or thresholds apply to the new compliance option. For a lighting system alteration defined in Section 141.0(b)2lii, requirements are triggered when 10 percent or more of the existing luminaires in the enclosed space are altered.

Under the new compliance option, when are requirements triggered for luminaire modifications-in-place?

The same triggers or thresholds apply to the new compliance option. For a luminaire modification-in-place, as defined in Section 141.0(b)2liii, requirements are triggered when 40 or more luminaires are modified in a building space within a twelve month period, and 10 percent or more of the existing luminaires in an enclosed space are modified.

For additional information on luminaire modifications-in-place, see **Blueprint Issue 107**.

Table 1: Control Requirements for Luminaire Alterations

Applicable Section 130.1 control requirements	Resulting lighting power, compared to the lighting power allowance in Section 140.6(c)2, Area Category Method		
	EXISTING OPTION 1 Lighting power density is > 85% of allowance	EXISTING OPTION 2 Lighting power density is ≤ 85% of allowance	NEW OPTION Existing lighting power is reduced by 50/35%
Section 130.1(a)1, 2, and 3 Area Controls	Yes	Yes	Yes
Section 130.1(b) Multi-Level Lighting Controls – only for alterations to general lighting of enclosed spaces 100 square feet or larger with a connected lighting load that exceeds 0.5 watts per square foot	Yes	Two level lighting control for each altered luminaire, with at least one step between 30-70 percent of lighting power regardless of luminaire type, or meet Section 130.1(b)	Not Required
Section 130.1(c) Shut-Off Controls	Yes	Yes	<sup>1</sup> Yes
Section 130.1(d) Automatic Daylight Controls	Yes	Not Required	Not Required
Section 130.1(e) Demand Responsive Controls – only for alterations where the area of all altered enclosed spaces is greater than 10,000 square feet in a single building, where the alteration also changes the area of the space, the occupancy type of the space, or increases the lighting power	Yes	Not Required	Not Required

<sup>1</sup> Since two level lighting controls are not required for this option, partial-off controls are not required to be installed in place of “full off” automatic shutoff controls.

**Under the new compliance option, does the 50/35 percent reduction in lighting power apply to the enclosed space?**

No. The power reduction applies only to the luminaires being replaced or modified. The replaced or modified luminaires must have at least a 50 percent (office, hotel, retail) or 35 percent (all other spaces) lower rated power at full lighting output compared to the original luminaires.

**I want to replace the luminaires in the bathroom of my office building. To use this new option, must the lighting power of the luminaires in the bathroom be reduced by 50 or 35 percent?**

Thirty five percent. A bathroom is included in *all other spaces*.

## Roofing Projects and Solar Reflective Index

**For a roofing project (residential or nonresidential), can I use the initial solar reflective index (SRI) value of a roofing product given by the Cool Roof Rating Council (CRRC) to meet the roofing product requirements of the 2013 Energy Standards?**

No. **Section 110.8(i)3** of the 2013 Energy Standards requires the SRI to be calculated based on the aged solar reflectance value of the roofing product. The initial SRI value given by the CRRC only takes into account initial solar reflectance and initial thermal emittance.

To determine the SRI value of a roofing product for compliance with the Energy Standards, you have two options:

1. Use the Energy Commission **SRI calculator**; or
2. If available, use the aged SRI value given by the CRRC.

NOTE: When using the SRI calculator, the thermal emittance can be either the initial or 3-year aged value.

## For More Information

**Home Energy Rating System:**

<http://www.energy.ca.gov/HERS/>

**Acceptance Test Technician**

**Certification Provider Program:**

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

**Approved Computer Compliance**

**Programs:**

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

**The California Energy Commission welcomes your feedback on Blueprint.**

**Please contact Andrea Bailey at:**

[Title24@energy.ca.gov](mailto:Title24@energy.ca.gov)

## EDITOR

» Andrea Bailey

## SPECIAL THANKS

- |                     |                     |
|---------------------|---------------------|
| » Alex Pineda       | » Jose Perez        |
| » Alexis Smith      | » Kristen Driskell  |
| » Chris Olvera      | » Mark Alatorre     |
| » Christopher Meyer | » Paula David       |
| » Daniel Wong       | » Payam Bozorgchami |
| » Danny Tam         | » Peter Strait      |
| » Erik Jensen       | » Simon Lee         |
| » Gabriel Taylor    | » Veronica Martinez |
| » Javier Perez      |                     |

**Edmund G. Brown Jr.**  
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Executive Director

**Need Help? Energy Standards Hotline**  
(800) 772-3300 (toll-free in CA)  
[Title24@energy.ca.gov](mailto:Title24@energy.ca.gov)

Commissioners  
**Karen Douglas**  
**David Hochschild**  
**Andrew McAllister**  
**Janea A. Scott**

**Appliances and Outreach and Education Office**  
1516 Ninth St, MS-25  
Sacramento, CA 95814-5512  
(916) 654-4064



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