



STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

Washington State Energy Code Development Standard Energy Code Proposal Form

May 2018

Log No. 094 Rev 7/13/21

Code being amended: Commercial Provisions Residential Provisions

Code Section # Table C405.4.2(2) footnotes / C405.2.2.1 Additional interior lighting power.

Brief Description:

Eliminate Table C405.4.2.2.1 Additional interior lighting power footnotes c. and n. in exchange for language more consistent with ASHRAE 90.1-2019.

Proposed code change text: (Copy the existing text from the Integrated Draft, linked above, and then use underline for new text and ~~strikeout~~ for text to be deleted.)

Table C405.4.2(2) INTERIOR LIGHTING POWER ALLOWANCES: SPACE-BY-SPACE METHOD

~~c. For spaces in which lighting is specified to be installed in addition to, and controlled separately from, the *general lighting* for the purpose of lighting art or exhibits, provided that the additional lighting power shall not exceed 0.5 w/ft² of such spaces. RESERVED.~~

~~n. Additional lighting power allowance of 0.30 W/square foot for ornamental lighting. Qualifying ornamental lighting includes luminaires such as chandeliers, sconces, lanterns, neon and cold cathode, light emitting diodes, theatrical projectors, moving lights and light color panels when any of those lights are used in a decorative manner that does not serve as display lighting or *general lighting*. RESERVED.~~

C405.4.2.2.1 Additional interior lighting power. Where using the Space-by-Space Method, an increase in the interior lighting power allowance is permitted for specific lighting functions. Additional power shall be permitted only where the specified lighting is installed and automatically controlled separately from the *general lighting*, to be ~~turned-off during nonbusiness hours and~~ controlled in accordance with Section C405.2.6. This additional power shall be used only for the specified luminaires and shall not be used for any other purpose. ~~[Insert carriage return]~~

An increase in the interior lighting power allowance is permitted ~~in the following cases:~~

~~a. For each *space* in which lighting is specified to be installed for the purpose of decorative appearance or for highlighting art or exhibits, in addition to the general lighting in the space, and does not increase the total project connected load by 0.25 W/square foot.~~

~~b. For lighting equipment to be installed in sales areas specifically to highlight merchandise. The additional lighting power shall be determined in accordance with Equation 4-11:~~

Additional interior lighting power allowance = 500 watts + (Retail Area 1 x 0.45 W/ft²) + (Retail Area 2 x 0.45 W/ft²) + (Retail Area 3 x 1.05 W/ft²) + (Retail Area 4 x 1.87 W/ft²)

(Equation 4-11)

Where:

- Retail Area 1 = The floor area for all products not listed in Retail Area 2, 3 or 4.
- Retail Area 2 = The floor area used for the sale of vehicles, sporting goods and small electronics.
- Retail Area 3 = The floor area used for the sale of furniture, clothing, cosmetics and artwork.
- Retail Area 4 = The floor area used for the sale of jewelry, crystal and china.

Exception: Other merchandise categories are permitted to be included in Retail Areas 2 through 4, provided that justification documenting the need for additional lighting power based on visual inspection, contrast, or other critical display is *approved* by the *code official*.

~~c. For luminaires serving circadian lighting stimulus, specified fixtures with tunable color or white light may be listed at 50% connected load.~~

Purpose of code change:

This Code Change Proposal amends the current code so that Washington State more closely matches ASHRAE-90.1 2019.

Artwork illumination (display lighting) and lighting integrated within art (ornamental lighting) should be encouraged for the purpose of spatial definition, improved human experience, and general well-being. When applied selectively, as it most often is, display and ornamentation lighting has the potential to reduce the power consumption of general lighting surrounding it based on the needs of visual balance and implied hierarchy.

The problem with the code as written is that more space types in the Table C405.4.2(2) warrant the use of current footnotes c. (Display) and n. (Ornamental) lighting, e.g. primary stairways, tenant improvement open office areas, libraries at large (not just the reading room), in many health care facility areas, transportation areas, etc. The selection of pertinent areas can be subjectively interpreted, as can the difference between the lighting of artwork and lighting being the actual artwork.

Additionally, no mention of circadian stimulus lighting is mentioned in the code, a treatment in many commercial spaces now which doubles the connected load of the specific luminaire. Sometimes this lighting is the *general lighting*, and as such warrants different code language. A listing at 50% connected load will be comparable to static color temperature equivalent optical distribution luminaires.

The other benefit of this change is a reduction in code form complexity. The process for which information is entered into the form is burdensome when listed by space type. A blanket approach will allow for code form ease of use. Luminaires can be listed by type if they satisfy Additional Interior Lighting Power criteria a. or c. and tallied relative to the "Allowed Watts" total. No change is proposed to criteria b.

Your amendment must meet one of the following criteria. Select at least one:

- Addresses a critical life/safety need.
- Consistency with state or federal regulations.
- The amendment clarifies the intent or application of the code.
- Addresses a unique character of the state.
- Addresses a specific state policy or statute.
(Note that energy conservation is a state policy)
- Corrects errors and omissions.



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Check the building types that would be impacted by your code change:

- | | | |
|--|---|---|
| <input type="checkbox"/> Single family/duplex/townhome | <input type="checkbox"/> Multi-family 4 + stories | <input checked="" type="checkbox"/> Institutional |
| <input type="checkbox"/> Multi-family 1 – 3 stories | <input checked="" type="checkbox"/> Commercial / Retail | <input type="checkbox"/> Industrial |

Your name CJ Brockway, IALD, MIES Email address cj@sparklabLD.com

Your organization SparkLab Lighting Design, LLC Phone number 206.251.8117

Other contact name [Click here to enter text.](#)

Instructions: Send this form as an email attachment, along with any other documentation available, to: sbcc@des.wa.gov. For further information, call the State Building Code Council at 360-407-9278.

Economic Impact Data Sheet

Briefly summarize your proposal's primary economic impacts and benefits to building owners, tenants and businesses.

Provide your best estimate of the construction cost (or cost savings) of your code change proposal? (See OFM Life Cycle Cost [Analysis tool](#) and [Instructions](#); use these [Inputs](#). **Webinars on the tool can be found [Here](#) and [Here](#)**)

Click here to enter text./square foot (For residential projects, also provide Click here to enter text./ dwelling unit)

Show calculations here, and list sources for costs/savings, or attach backup data pages

Provide your best estimate of the annual energy savings (or additional energy use) for your code change proposal?

Click here to enter text.KWH/ square foot (or) Click here to enter text.KBTU/ square foot

(For residential projects, also provide Click here to enter text.KWH/KBTU / dwelling unit)

Show calculations here, and list sources for energy savings estimates, or attach backup data pages

List any code enforcement time for additional plan review or inspections that your proposal will require, in hours per permit application:

All questions must be answered to be considered complete. Incomplete proposals will not be accepted.