

Oregon Non-Residential Building Energy Code



OREGON
DEPARTMENT OF
ENERGY

Exterior Lighting and Controls

Requirements

Lighting used on the exterior of buildings is one of the more visible energy uses. The Oregon Energy Code requires that lighting used to illuminate building facades, canopies, parking lots, pedestrian walkways, gardens, and other landscaped areas associated with a building have controls that enable them to be automatically shut off when they are not needed. The use of incandescent or mercury vapor luminaires is also prohibited for many exterior lighting applications, since these light sources are less efficient.

In terms of control, all exterior lighting shall be automatically controlled with either a photosensor switch or clock switch which is capable of turning off the lights when daylight is present. If a clock switch is used, it shall automatically compensate for the length of the day and how it changes throughout the year. Such a clock switch is often referred to as an astronomical clock switch. The clock switch shall also have battery backup so that it does not need to be reprogrammed after a temporary power outage. The control requirements apply to all exterior lighting applications that receive their power through the building's utility meter.

Incandescent and mercury vapor luminaires are prohibited for exterior building lighting. Exterior building lighting is a subset of total exterior lighting and includes façade lighting, canopy lighting, and lighting for adjacent walkways and loading areas with and without canopies. The restriction does not apply to parking lot lighting, landscape lighting or other applications that are not considered exterior building lighting. The restriction applies to the luminaire, not the lighting source, e.g. a screw-in compact fluorescent lamp in an incandescent luminaire counts as an incandescent luminaire.

Exceptions

Some exterior lighting applications are exempt from both control and luminaire type restrictions. These include athletic facilities, tunnels, high-risk security areas such as the area around automatic teller machines (ATMs), and areas designed for visually disabled persons. Sign lighting and nonpermanent lighting is also exempt, but these lighting applications must be separately controlled, e.g. they shall have their own switch and not be grouped with other lighting applications.

Code Language

1302 Definitions EXTERIOR BUILDING LIGHTING. Lighting directed to illuminate the exterior of the building and adjacent walkways and loading areas with or without canopies.

1313.1 General. The provisions in this section apply to lighting equipment, related controls and electric circuits serving the interior spaces of other buildings, exterior building facades (including illuminated roofs and other architectural features), and exterior areas such as entrances, exits, loading docks, illuminated canopies, roads, open parking, exterior retail and landscaping. Alterations to existing buildings shall comply with Section 1313.6.

Exceptions:

1. Lighting for the following areas:
 - 1.1 Outdoor athletic facilities.
 - 1.2 Dwelling units, lodging houses, one or two family dwellings and guest rooms.
 - 1.3 Industrial plants—manufacturing spaces only.
 - 1.4 Paint shops and painting spray booths.
 - 1.5 High-risk security areas such as detention facilities, automatic teller machines (ATMs) and night drops.
 - 1.6 Areas specifically designed for visually disabled people.
 - 1.7 Tunnels.
2. Lighting equipment used for the following shall be exempt provided that it is in addition to general lighting and is controlled by an independent control device:
 - 2.1 Production lighting for theatrical, television, spectator sports and similar performance areas.
 - 2.2 Decorative, special effect and production lighting for those portions of entertainment facilities such as theme parks, nightclubs, discos and casinos where lighting is an essential technical element for the function performed.
 - 2.3 Lighting equipment for sale.
 - 2.4 Task lighting for medical and dental purposes.
 - 2.5 Bench lighting for research laboratories.

- 2.6 Lighting to be used solely for indoor plant growth during the hours of 10:00 p.m. to 6:00 a.m.
- 2.7 Emergency lighting that is automatically off during normal building operation.
- 2.8 Art accent lighting required for art exhibits or displays in galleries, museums and monuments.
- 2.9 Sign lighting.
- 2.10 Nonpermanent lighting.

1313.3.2 Exterior and canopy lighting controls. All exterior lighting systems, including those attached to building exterior surfaces, mounted onto or in adjacent structures, attached to poles or mounted onto or in the ground, shall be controlled by photoelectric switches, clock switches or both, which shall be designed and programmed to extinguish lights when daylight is present. Clock switches shall be astronomic (seasonal correcting) type with separate programs for each day of the week and shall store energy to maintain timekeeping during power outages. A motion sensor, if used, shall employ a photoelectric switch to prevent operation during daytime.

1313.5 Exterior lighting. No incandescent or mercury vapor lighting sources shall be used for exterior building lighting.

Exception: Lighting used in or around swimming pools, water features, or other locations subject to the requirements of Article 680 of the National Electrical Code. Lighting power requirements for covered parking and storage garage areas shall be included in the interior lighting power of Section 1313.4.

Find Out More

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Other Non-residential Code LIGHTING Fact Sheets include:

- Daylighting Controls
- Interior Lighting Controls
- Exterior Lighting and Controls
- Interior Connected Lighting Power

Limits on Lighting Power

Apart from the restriction on incandescent and mercury vapor luminaires, there are no restrictions on the lighting power that is used for exterior lighting applications, with the exception of areas under roofs. Canopies, and covered parking areas are lumped together with interior lighting applications for the purpose of power restrictions. See the fact sheet on Interior Lighting Power for details.

Examples

Q The lighting system under an entrance canopy to a theatre is designed with incandescent cans. The building, including the canopy, complies with the interior lighting power allowances. Are the incandescent luminaires permitted?

A No. Even though the canopy is considered interior lighting for the purpose of the lighting power allowance, the luminaires are installed on the exterior of the building and section 1313.5 prohibits the use of incandescent or mercury vapor lamps for exterior building lighting.

Q Would the entrance canopy in the previous example comply with section 1313.5 if screw-in compact fluorescent lamps were used in the recessed cans?

A No. The restrictions of Section 1313.5 on the use of incandescent or mercury vapor applies to the luminaire, not the lamp. Incandescent luminaires that accept screw-in compact fluorescent luminaires do not qualify.

Q Incandescent marquis lighting is proposed for the entrance canopy in the previous example. Is this permitted?

A Yes. Marquis lighting is considered sign lighting and exception 2.9 to Section 1313.1 applies.

Q A designer would like to use incandescent path lighting next to a sidewalk that leads to the entrance of an office building. Is this permitted?

A No. Pathway lighting leading to the building is considered exterior building lighting and Section 1313.5 applies. Furthermore, this lighting must be controlled by an astronomical clock switch or a photosensor switch.