

# Energy Code for the State of Wisconsin

The State of Wisconsin has adopted the pre-2005 California Title 24, which is based on but is more stringent than 2001 IECC, as its State specific energy code.

The following are highlights of the Wisconsin Energy Code which pertain to lighting controls.

## INTERIOR LIGHTING.

**AREA CONTROLS.** Each area enclosed by ceiling-height partitions shall have an independent control or switching device. The device must be readily accessible and located so person using device can see lights or area controlled, or so that area being lit is annunciated. Device can be manually operated, or automatically controlled by an occupant sensor that can control all lights in the area within 30 minutes after it is vacated.

**CONTROLS TO REDUCE LIGHTING.** Each enclosed area 100ft<sup>2</sup> or larger in which lighting load exceeds 1.2W/ft<sup>2</sup> shall be controlled so loads for lights can be reduced by at least 50% while maintaining a reasonably uniform level of illuminance.

Exceptions are areas that are controlled by occupancy sensors, areas controlled by a dedicated automatic time switch device with manual override available at each switch location, areas that have only 1 luminaire, and corridors.

**DAYLIT AREA CONTROLS.** Daylit areas in any enclosed space greater than 250 ft<sup>2</sup> and a lighting density more than 1.2W/ft<sup>2</sup> shall have at least one control that controls only luminaires in the daylit area and controls at least 50% of the lamps or luminaires in the daylit area independent of all other lamps or luminaires in the enclosed space. Such areas shall have controls that control luminaires in each vertically daylit area separately from luminaires in each horizontally daylit area.

Automatic daylighting control devices:

- if dimmers, must provide electrical output to lamps for reduced flicker operation through dimming range;
- if a stepped dimming system, must incorporate time delay circuits to prevent cycling of less than 3 minutes.;
- if an on/off dimming system, must have sufficient separation or deadband of on & off to prevent cycling.

**AUTOMATIC SHUTOFF CONTROLS.** All interior lighting systems shall be equipped with at least on separate automatic control to shut off the lighting. This control can be an occupancy sensor, automatic time switch or other device.

If an automatic time switch is used, it must be capable of programming different schedules for weekdays and weekends, have a holiday shutoff feature of at least 24 hours and have program backup capabilities for at least 10 hours if power is interrupted. It must also incorporate an override switching device.

**GUESTROOMS.** Guestrooms and suites within buildings shall have at least one master switch located near the entry that controls all lighting fixtures, except those located in bathrooms, within the area.

**INTERIOR POWER ALLOWANCE.** The interior power allowance, in watts, can be calculated by any of 3 methods:

- (1) COMPLETE BUILDING METHOD: the value for the building type, as listed on Table 63.1047 of the Wisconsin State Energy Code, times the floor square footage for the entire building.
- (2) AREA CATEGORY METHOD: the sum, for all building areas, of the floor square footage of each building area times the value, as listed on Table 63.1048 of the Wisconsin State Energy Code, for that area's use.
- (3) ACTIVITY METHOD: the sum, for all activity areas in the building, of the floor square footage of each activity area times the value, as listed on Table 63.1049 of the Wisconsin State Energy Code, for that activity area.

## EXTERIOR LIGHTING.

**GENERAL.** Except for lighting in parking garages, tunnels and large covered areas requiring illumination during daylight hours, exterior lighting shall be controlled by a directional photocell or astronomic time switch that automatically turns off lighting when daylight is available. Time switches shall be capable of maintaining the correct time during a power outage lasting up to 10 hours.

**EXTERIOR POWER ALLOWANCE.** The exterior power allowance is the sum of all the allowed lighting powers for all exterior areas, which are each calculated by multiplying their unit power allowance by their applicable length or area. Values for calculating exterior power allowance are listed on Table 63.1043 of the Wisconsin State Energy Code.

The above is a very brief guideline, as interpreted by Douglas Lighting Controls. Refer to the Wisconsin State Energy Code for details applicable to your lighting control project.

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