

# Energy Code for the State of North Dakota

Currently, North Dakota does not have a mandatory State energy code. It does utilize ASHRAE 90.1-1989 as a voluntary Standard, contingent on adoption by local jurisdiction.

The following are highlights of the ASHREA 90.1-1989 Standard- applicable to those localities in North Dakota that use it- which pertain to lighting controls.

## INTERIOR LIGHTING.

**NUMBER OF MANUAL CONTROLS.** Spaces enclosed by ceiling-height partitions shall have a minimum of one manual control for the lighting in that space. Additional manual controls shall be provided for each task location or for each group of task locations within an area of 450 ft<sup>2</sup> or less. For spaces with only one lighting fixture or a single ballast, one manual control is required.

Exceptions are:

1. Continuous lighting for security;
2. Systems in which occupancy sensors, programmable timers, or 3-level step or dimming controls are used;
3. Systems in which 4-level step or dimming controls are used;
4. Spaces that are used as a whole, such as public lobbies, retail stores, warehouses or storerooms.

**CONTROL ACCESSIBILITY.** Interior lighting controls shall be readily accessible from within the space controlled. Exceptions are controls for spaces used as a whole, automatic controls, programmable controls, controls requiring trained operators or controls for safety or security.

**TANDEM WIRING.** One-lamp or three-lamp fluorescent luminaires that are recess mounted within 10' center-to-center, or pendant mounted, or surface mounted within 1' of each other and within the same room, shall be tandem wired, unless three-lamp ballasts are used.

**GUEST ROOM.** Hotel and motel guest rooms and suites shall have at least one master switch at the entry door which controls all fixtures and all switched receptacles except those in bathrooms.

**INTERIOR POWER ALLOWANCE.** The interior lighting power allowance for a building shall be determined by either the space activity method (sum of space activity power allowances times gross lighted floor area for that activity) or the unit method (sum of unit power allowances times area of space used times area factor as determined by unit activity type).

## INTERIOR POWER ALLOWANCE (continued).

Power allowance factors for the space activity method are in Table 401.3.2a and power allowance factors for the unit method are in Table 401.3.2b of the ASHRAE 90.1-1999 Standard.

For both methods, credits are given for the use of lighting control devices, which include automatic controls, daylight sensing controls and programmable timing controls. Factors for determining credits are in Table 401.3.3 of the ASHRAE 90.1-1999 Standard.

## EXTERIOR LIGHTING.

**GENERAL.** Exterior lighting not intended for 24-hour use shall be automatically switched by either timer or photocell or a combination of timer and photocell. When used, timers shall be capable of 7-day and seasonal adjustment daylight schedule adjustment and have power backup for at least 4 hours.

**EXTERIOR POWER ALLOWANCES.** The exterior power allowance is the sum of the individual power allowances. The individual power allowances are:

- Building entrances with canopy 10W/ft<sup>2</sup> of canopied area (high traffic), 4W/ft<sup>2</sup> of canopied area (low traffic);
- Building entrance without canopy: 30W/lin ft. of door width;
- Building exit: 25W/ lin ft. of door width;
- Building facades: 0.25 w/ft<sup>2</sup> of illuminated facade area.
- Miscellaneous (loading, walkways, parking, etc.): 0.1-0.4W/ft<sup>2</sup>.

Exceptions are lighting for outdoor manufacturing or processing, outdoor athletic facilities, public monuments, security areas, signs, storefronts, display windows or lighting required by local ordinance.

The above is a very brief guideline of the ASHRAE 90.1-1989 Standard, as interpreted by Douglas Lighting Controls. Note again that many localities within the State of North Dakota have not adopted this Standard. Refer to the energy code of your local jurisdiction within North Dakota for details applicable to your lighting control project.

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