

Section 9.34. Electrical Facilities

9.34.1. General

9.34.1.1. Standard for Electrical Installations

- 1) Electrical installations, including the service capacity of the installation and the number and distribution of circuits and receptacles, shall conform to the Electrical Safety Regulation.”
- 2) In addition to the requirements of Sentence (1), electrical installations in a principal *dwelling unit* containing an *ancillary residential unit* in a residential *suite* in an apartment building required to conform to Section 9.37 shall also comply with the following:
 - a) the electrical service size shall be based on the demand load calculated on the total area of the principal *dwelling unit* including any associated *ancillary residential unit*, provided that
 - i) for each electrical range additional to the first range, 6 kW demand shall be added for a rating of 12 kW or less, plus 40% of the amount by which the rating of the range exceeds 12 kW, and
 - ii) except for the first electrical range referred to in Subclause (2)(a)(i), any electrical equipment loads provided for shall be calculated in conformance with Sentence (1), and
 - b) a single panel board may supply electrical loads of the *dwelling units* referred to in Clause (2)(a) except for the *residential suite* containing an *ancillary residential unit* in an apartment building, provided that it is located within the *building* in a common area accessible to all occupants of the *building*.
- 3) Circuit breakers of panel boards installed in the dwelling units
 - a) shall be positioned not less than 600 mm above the finished floor level, and
 - b) notwithstanding the requirements of Sentence (1) and 3.8.5.7.(2), shall be positioned as high as feasible with the branch circuit breakers not more than 1500 mm above the finished floor level.

9.34.1.2. Required Facilities

- 1) Where electrical services are available, electrical facilities shall be provided for every *building* in conformance with this Section.

9.34.1.3. Location of Equipment in Public Areas

- 1) Entrance switches, meters, panel boxes, splitter boxes, time clocks and other similar equipment shall not be located in any public area unless adequate precautions are taken to prevent interference with the equipment.

9.34.1.4. Recessed Lighting Fixtures

- 1) Recessed lighting fixtures shall not be located in insulated ceilings unless the fixtures are designed for such installations.

9.34.1.5. Wiring and Cables

- 1) Except as required in Sentence (2), optical fibre cables and electrical wires and cables installed in *buildings* permitted to be of *combustible construction* shall
 - a) not convey flame or continue to burn for more than 1 min when tested in conformance with the Vertical Flame Test (FT1 rating) in CSA C22.2 No. 0.3, “Test Methods for Electrical Wires and Cables,” or
 - b) be located in
 - i) totally enclosed *noncombustible* raceways (See Note A-3.1.4.3.(1)(b)(i)),
 - ii) masonry walls,
 - iii) concrete slabs, or
 - iv) totally enclosed non-metallic raceways conforming to Clause 3.1.5.23.(1)(b).
- 2) Except as permitted in Sentence (3), where a concealed space in a floor or ceiling assembly is used as a *plenum*, electrical wires and cables with *combustible* insulation, jackets or sheathes that are used for the transmission of voice, sound or data and optical fibre cables installed within the *plenum* shall conform to Clause 3.6.4.3.(1)(a).

3) Wires or cables within *plenum* spaces that are used for the transmission of signals in fire alarm, security, radio, and television broadcasting, closed circuit television or community television systems need not meet the requirements of Sentence (2).

9.34.2. Lighting Outlets

(See Note A-9.34.2.)

9.34.2.1. Lighting of Entrances

1) An exterior lighting outlet with fixture controlled by a wall switch located within the *building* shall be provided at every entrance to *buildings* of *residential occupancy*.

9.34.2.2. Outlets in Dwelling Units

1) Except as provided in Sentence (2), a lighting outlet with fixture controlled by a wall switch shall be provided in kitchens, bedrooms, living rooms, utility rooms, laundry rooms, dining rooms, bathrooms, water-closet rooms, vestibules and hallways in *dwelling units*.

2) Where a receptacle controlled by a wall switch is provided in bedrooms or living rooms, such rooms need not conform to the requirements in Sentence (1).

9.34.2.3. Stairways

1) Every stairway shall be lighted.

2) Except as provided in Sentence (3), 3-way wall switches located at the head and foot of every stairway shall be provided to control at least one lighting outlet with fixture for stairways with 4 or more risers in *dwelling units*.

3) The stairway lighting for *basements* that do not contain finished space or lead to an outside entrance or built-in garage and which serve not more than one *dwelling unit* is permitted to be controlled by a single switch located at the head of the stairs.

9.34.2.4. Basements

1) A lighting outlet with fixture shall be provided for each 30 m² or fraction thereof of *floor area* in unfinished *basements*.

2) The outlet required in Sentence (1) nearest the stairs shall be controlled by a wall switch located at the head of the stairs.

9.34.2.5. Storage Rooms

1) A lighting outlet with fixture shall be provided in storage rooms.

9.34.2.6. Garages and Carports

1) A lighting outlet with fixture shall be provided for an attached, built-in or detached garage or carport.

2) Except as provided in Sentence (3), outlets required in Sentence (1) shall be controlled by a wall switch near the doorway.

3) Where the outlet and fixture required in Sentence (1) are ceiling mounted above an area not normally occupied by a parked car, or are wall mounted, a fixture with a built-in switch accessible to an adult of average height is permitted to be used.

4) Where a carport is lighted by a light at the entrance to a *dwelling unit*, additional carport lighting is not required.

9.34.2.7. Public and Service Areas

1) Every public or service area in *buildings* shall be provided with lighting outlets with fixtures controlled by a wall switch or panel to illuminate every portion of such areas.

2) When provided by incandescent lighting, illumination required in Sentence (1) shall conform to Table 9.34.2.7. (See Article 9.9.12.2. for lighting in *means of egress*.)

- 3) When other types of lighting are used, illumination equivalent to that shown in Table 9.34.2.7. shall be provided.

Table 9.34.2.7.
Lighting for Public Areas
Forming Part of Sentences 9.34.2.7.(2) and (3)

Room or Space	Minimum Illumination, lx	Minimum Lighting Power Density, W/m ² of floor area (incandescent lighting)
Storage rooms	50	5
Service rooms and laundry areas	200	20
Garages	50	5
Public water closet rooms	100	10
Service hallways and stairways	50	5
Recreation rooms	100	10

9.34.3. Emergency Lighting

9.34.3.1. Criteria for Emergency Lighting

- 1) Emergency lighting shall conform to Subsection 9.9.12.