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### 3.2.6. ADDITIONAL REQUIREMENTS FOR HIGH BUILDINGS (SEE NOTE A-3.2.6.)

#### 3.2.6.1. APPLICATION

1. Except as provided in Sentence (2), this Subsection applies to a building
  - a) of Group A, D, E or F major occupancy classification that is more than
    - i) 36 m high, measured between grade and the floor level of the top storey, or
    - ii) 18 m high, measured between grade and the floor level of the top storey, and in which the cumulative or total occupant load on or above any storey above grade, other than the first storey, divided by 1.8 times the width in metres of all exit stairs at that storey, exceeds 300,
  - b) containing a Group B major occupancy in which the floor level of the highest storey of that major occupancy is more than 18 m above grade,
  - c) containing a floor area or part of a floor area located above the third storey designed or intended as a Group B, Division 2 or 3 occupancy, or
  - d) containing a Group C major occupancy whose floor level is more than 18 m above grade.
2. This Subsection applies to a building or part of a building constructed in conformance with Article 3.2.2.57. in which the floor level of the highest storey is more than 18 m above grade.

### 3.2.7. LIGHTING AND EMERGENCY POWER SYSTEMS

#### 3.2.7.3. EMERGENCY LIGHTING

1. Emergency lighting shall be provided to an average level of illumination not less than 10 lx at floor or tread level in
  - a) exits
  - b) principal routes providing access to exit in open floor areas and in service rooms,
  - c) corridors used by the public,
  - d) corridors serving sleeping rooms in a treatment occupancy,
  - e) corridors serving sleeping rooms in a care occupancy, except corridors serving sleeping rooms within individual suites of care occupancy,
  - f) corridors serving classrooms,
  - g) underground walkways,
  - h) public corridors,
  - i) floor areas or parts thereof where the public may congregate
    - i) in Group A, Division 1 occupancies, or
    - ii) in Group A, Division 2 and 3 occupancies having an occupant load of 60 or more,
  - j) floor areas or parts thereof of daycare centres where persons are cared for, and
  - k) food preparation areas in commercial kitchens.
  - l) public washrooms that are equipped to serve more than one person at a time,

- m) locations where doors are equipped with an electromagnetic lock as described in Clauses 3.4.6.16.(5)(k) and (6)(g), and
- n) universal washrooms, universal shower rooms and accessible change spaces required by Article 3.8.2.8.

2. Emergency lighting to provide an average level of illumination of not less than 10 lx at floor or catwalk level shall be included in a service space referred to in Sentence 3.2.1.1.(8).
3. The minimum value of the illumination required by Sentences (1) and (2) shall be not less than 1 lx.
4. In addition to the requirements of Sentences (1) to (3), the installation of battery-operated emergency lighting in buildings or part thereof where treatment is provided shall conform to the appropriate requirements of CSA Z32, "Electrical Safety and Essential Electrical Systems in Health Care Facilities".

#### 3.2.7.4. EMERGENCY POWER FOR LIGHTING

1. An emergency power supply shall be
  - a) provided to maintain the emergency lighting required by this Subsection from a power source such as batteries or generators that will continue to supply power in the event that the regular power supply to the building is interrupted, and
  - b) so designed and installed that upon failure of the regular power it will assume the electrical load automatically for a period of
    - i) 2h for a building within the scope of Subsection 3.2.6.,
    - ii) 1h for a building of Group B major occupancy classification that is not within the scope of Subsection 3.2.6.,
    - iii) 1h for a building constructed in accordance with Article 3.2.2.51. or 3.2.2.60., and
    - iv) 30 min for a building of any other occupancy.(See Note A-3.2.7.4.(1).)

2. If self-contained emergency lighting units are used, they shall conform to CSA C22.2 No. 141, "Emergency Lighting Equipment."

#### 3.2.7.5. EMERGENCY POWER SUPPLY INSTALLATION

1. Except as required by Articles 3.2.7.6. and 3.2.7.7., an emergency electrical power supply system shall be installed in conformance with CSA C282, "Emergency electrical power supply for buildings." (See Sentence 3.2.7.8.(1) for emergency electrical power supply for voice communication systems.)

### 3.4.5. EXIT SIGNS

#### 3.4.5.1. EXIT SIGNS

1. Every exit door shall have an exit sign providing visual information placed over or adjacent to it if the exit serves
  - a) a building more than 2 storeys in building height,
  - b) a building having an occupant load of more than 150, or
  - c) a room or floor area that has a fire escape as part of a required means of egress
2. Every exit sign providing visual information shall
  - a) be visible on approach to the exit,
  - b) consist of a green and white or lightly tinted graphical symbol

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- meeting the colour specifications referred to in ISO 3864-1, “Graphical symbols – Safety colours and safety signs—Part 1: Design principles for safety signs and safety markings,” and
- c) conform to ISO 7010, “Graphical symbols – Safety colours and safety signs – Registered safety signs,” for the following symbols (see Note A-3.4.5.1.(2)(c)):
- i) E001 emergency exit left,
  - ii) E002 emergency exit right,
  - iii) E005 90-degree directional arrow, and
  - iv) E006 45-degree directional arrow.
3. Internally illuminated exit signs shall be continuously illuminated and
- a) where illumination of the sign is powered by an electrical circuit, be constructed in conformance with CSA C22.2 No. 141, “Emergency lighting equipment,” or
  - b) where illumination of the sign is not powered by an electrical circuit, be constructed in conformance with CAN/ULC-S572, “Standard for Photoluminescent and Self-Luminous Exit Signs and Path Marking Systems.”
4. Externally illuminated exit signs shall be continuously illuminated and be constructed in conformance with CAN/ULC-S572, “Standard for Photoluminescent and Self-Luminous Exit Signs and Path Marking Systems.” (See Note A-3.4.5.1.(4).)
5. The circuitry serving lighting for externally and internally illuminated exit signs shall
- a) serve no equipment other than emergency equipment, and
  - b) be connected to an emergency power supply as described in Article 3.2.7.4.
6. Where no exit is visible from a public corridor, from a corridor used by the public in a Group A or B major occupancy, or from principal routes serving an open floor area having an occupant load of more than 150, an exit sign conforming to Clauses (2)(b) and (c) with an arrow or pointer indicating the direction of egress shall be provided.
7. Except for egress doorways described in Sentence 3.3.2.4.(4), an exit sign conforming to Sentences (2) to (5) shall be placed over or adjacent to every egress doorway from rooms with an occupant load of more than 60 in Group A, Division 1 occupancies, dance halls, licensed beverage establishments, and other similar occupancies that, when occupied, have lighting levels below that which would provide easy identification of the egress doorway.

### 3.4.5.3. Signs for Stairs and Ramps at Exit Level

1. In a building more than 2 storeys in building height, any part of an exit ramp or stairway that continues up or down past the lowest exit level shall have a posted sign clearly indicating that it does not lead to an exit.

## Division B

### Notes to Part 3

#### FIRE PROTECTION, OCCUPANT SAFETY AND ACCESSIBILITY

**A-3.1.2. USE CLASSIFICATION.** The purpose of classification is to determine which requirements apply. This Code requires classification in accordance with every major occupancy for which the building is used or intended to be used. Where necessary, an application clause has been inserted in this Part to explain how to choose between the alternative requirements which multiple occupancy classification may present.

##### A-3.1.2.1.(1) MAJOR OCCUPANCY CLASSIFICATION.

The following are examples of the major occupancy classifications described in Table 3.1.2.1.:

##### Group A, Division 1

Motion picture theatres  
Opera houses  
Television studios admitting a viewing audience  
Theatres, including experimental theatres

##### Group A, Division 2

Art galleries  
Auditoria  
Bowling alleys  
Churches and similar places of worship  
Clubs, nonresidential  
Community halls  
Courtrooms  
Dance halls  
Exhibition halls (other than classified in Group E)  
Gymnasias  
Lecture halls  
Libraries  
Licensed beverage establishments  
Museums  
Passenger stations and depots  
Recreational piers  
Restaurants  
Schools and colleges, nonresidential  
Undertaking premises

##### Group A, Division 3

Arenas  
Indoor swimming pools, with or without spectator seating  
Rinks

##### Group A, Division 4

Amusement park structures (not elsewhere classified)  
Bleachers  
Grandstands  
Reviewing stands  
Stadia

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### Group B, Division 1

Jails  
Penitentiaries  
Police stations with detention quarters  
Prisons  
Psychiatric hospitals with detention quarters  
Reformatories with detention quarters

### Group B, Division 2

Care facilities with treatment  
Convalescent /recovery/rehabilitation centres with treatment  
Hospices with treatment Hospitals Infirmaries  
Nursing homes with treatment  
Psychiatric hospitals without detention quarters  
Respite centres with treatment

### Group B, Division 3

Assisted/supportive living facilities  
Care facilities without treatment  
Children's custodial homes  
Convalescent/recovery/rehabilitation centres without treatment  
Group homes  
Hospices without treatment  
Nursing homes without treatment  
Reformatories without detention quarters  
Respite centres without treatment

### Group C

Apartments  
Boarding houses  
Clubs, residential  
Colleges, residential  
Convents  
Dormitories  
Hotels  
Houses  
Lodging houses  
Monasteries  
Motels  
Schools, residential

### Group D

Banks  
Barber and hairdressing shops  
Beauty parlours  
Dental offices  
Dry cleaning establishments, self-service, not using flammable or explosive solvents or cleaners  
Laundries, self-service  
Medical offices

Offices  
Police stations without detention quarters  
Radio stations  
Small tool and appliance rental and service establishments

### Group E

Department stores  
Exhibition halls  
Markets  
Shops  
Stores  
Supermarkets

### Group F, Division 1

Bulk plants for flammable liquids  
Bulk storage warehouses for hazardous substances  
Cereal mills  
Chemical manufacturing or processing plants  
Distilleries  
Dry cleaning plants  
Feed mills  
Flour mills  
Grain elevators  
Lacquer factories  
Mattress factories  
Paint, varnish and pyroxylin product factories  
Rubber processing plants  
Spray painting operations  
Waste paper processing plants

### Group F, Division 2

Aircraft hangars  
Box factories  
Candy plants  
Cold storage plants  
Dry cleaning establishments not using flammable or explosive solvents or cleaners  
Electrical substations  
Factories  
Freight depots  
Helicopter landing areas on roofs  
Laboratories  
Laundries, except self-service  
Mattress factories  
Planing mills  
Printing plants  
Repair garages  
Salesrooms  
Service stations

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Storage rooms

Television studios not admitting a viewing audience

Warehouses

Wholesale rooms

Woodworking factories

Workshops

### Group F, Division 3

Creameries

Factories

Laboratories

Light-aircraft hangars (storage only)

Power plants

Salesrooms

Sample display rooms

Storage garages, including open air parking garages

Storage rooms

Warehouses

Workshops

### 9.9.11. SIGNS

#### 9.9.11.1. APPLICATION

1. This Subsection applies to all exits except those serving not more than one dwelling unit or a house with a secondary suite.

#### 9.9.11.2. VISIBILITY OF EXITS

1. Exits shall be located so as to be clearly visible or their locations shall be clearly indicated.
2. Where an exit door leading directly to the outside is subject to being obstructed by parked vehicles or storage because of its location, a visible sign or a physical barrier prohibiting such obstruction shall be installed on the exterior side of the door.

#### 9.9.11.3. EXIT SIGNS

1. Every exit door shall have an exit sign placed over it or adjacent to it if the exit serves
  - a) a building that is 3 storeys in building height,
  - b) a building having an occupant load of more than 150, or
  - c) a room or floor area that has a fire escape as part of a required means of egress.
2. Every exit sign shall
  - a) be visible on approach to the exit,
  - b) consist of a green pictogram and a white or lightly tinted graphical symbol meeting the colour specifications referred to in ISO 3864-1, "Graphical symbols – Safety colours and safety signs – Part 1: Design principles for safety signs in workplaces and public areas," and
  - c) conform to the dimensions indicated in ISO 7010, "Graphical symbols – Safety colours and safety signs – for the following symbols

(see A-3.4.5.1.(2)(c))

- i) E001 emergency exit left,
  - ii) E002 emergency exit right,
  - iii) E005 90-degree directional arrow, and
  - iv) E006 45-degree directional arrow.
3. Internally illuminated exit signs shall be continuously illuminated and
    - a) where illumination of the sign is powered by an electrical circuit, be constructed in conformance with CSA C22.2 No. 141, "Emergency Lighting Equipment," or
    - b) where illumination of the sign is not powered by an electrical circuit, be constructed in conformance with CAN/ULC-S572, "Photoluminescent and Self-Luminous Signs and Path Marking Systems."
  4. Externally illuminated exit signs shall be continuously illuminated and be constructed in conformance with CAN/ULC-S572, "Photoluminescent and Self-Luminous Signs and Path Marking Systems." (See A-3.4.5.1.(4).)
  5. The circuitry serving lighting for externally and internally illuminated exit signs shall
    - a) serve no equipment other than emergency equipment, and
    - b) be connected to an emergency power supply as described in Sentences 9.9.12.3.(2), (3) and (7).
  6. Where no exit is visible from a public corridor, from a corridor used by the public, or from principal routes serving an open floor area having an occupant load of more than 150, an exit sign conforming to Clauses (2)(b) and (c) with an arrow or pointer indicating the direction of egress shall be provided.

#### 9.9.11.4. SIGNS FOR STAIRS AND RAMPS AT EXIT LEVEL

1. In buildings that are 3 storeys in building height, any part of an exit ramp or stairway that continues up or down past the lowest exit level shall be clearly marked to indicate that it does not lead to an exit, if the portion beyond the exit level may be mistaken as the direction of exit travel.

### 9.9.12. LIGHTING

#### 9.9.12.2. REQUIRED LIGHTING IN EGRESS FACILITIES

1. Every exit, public corridor or corridor providing access to exit for the public shall be equipped to provide illumination to an average level of not less than 50 lx at floor or tread level and at all points such as angles and intersections at changes of level where there are stairs or ramps.
2. The minimum value of the illumination required by Sentence (1) shall be not less than 10 lx

#### 9.9.12.3. EMERGENCY LIGHTING

1. Emergency lighting shall be provided in
  - a) exits,
  - b) principal routes providing access to exit in an open floor area,
  - c) corridors used by the public,
  - d) underground walkways, and

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- e) public corridors.
- 2. Emergency lighting required in Sentence (1) shall be provided from a source of energy separate from the electrical supply for the building.
- 3. Lighting required in Sentence (1) shall be designed to be automatically actuated for a period of at least 30 min when the electric lighting in the affected area is interrupted.
- 4. Illumination from lighting required in Sentence (1) shall be provided to average levels of not less than 10 lx at floor or tread level.
- 5. The minimum value of the illumination required by Sentence (4) shall be not less than 1 lx.
- 6. Where incandescent lighting is provided, lighting equal to 1 W/m<sup>2</sup> of floor area shall be considered to meet the requirement in Sentence (4).
- 7. Where self-contained emergency lighting units are used, they shall conform to CSA C22.2 No. 141, "Emergency Lighting Equipment."

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### SECTION 46 — EMERGENCY POWER SUPPLY, UNIT EQUIPMENT, EXIT SIGNS, AND LIFE SAFETY SYSTEMS

#### 46-000 SCOPE (SEE APPENDIX B)

1. This Section applies to the installation, operation, and maintenance of
  - a) emergency power supply and unit equipment intended to provide power to life safety systems; and
  - b) emergency power supply and unit equipment intended to provide illumination of exit signs, in the event of failure of the normal supply, where the emergency power supply is required by the National Building Code of Canada.
2. This Section applies to the wiring between the emergency power supply and life safety systems that are required by the National Building Code of Canada to be provided with an emergency power supply
3. This Section applies to the wiring of exit signs
4. The requirements of this Section supplement or amend the general requirements of this Code

#### 46-002 SPECIAL TERMINOLOGY (SEE APPENDIX B)

In this Section, the following definitions apply:

##### Emergency power supply

Emergency power, supplied by a generator, batteries, or a combination thereof, that is required by the National Building Code of Canada.

##### Life safety systems

Emergency lighting and fire alarm systems that are required to be provided with an emergency power supply from batteries, generators, or a combination thereof, and electrical equipment for building services such as fire pumps, elevators, smoke-venting fans, smoke control fans, and dampers that are required to be provided with an emergency power supply by an emergency generator in conformance with the National Building Code of Canada.

##### Unit equipment

Unit equipment for emergency lighting conforming to CSA C22.2 No. 141.

### GENERAL

#### 46-100 CAPACITY

Emergency power supply and unit equipment shall have adequate capacity and rating to ensure the satisfactory operation of all connected equipment when the principal source of power fails.

#### 46-102 INSTRUCTIONS

1. Complete instructions for the operation and care of an emergency power supply or unit equipment that shall specify testing at least once every month to ensure security of operation shall be posted on the premises in a frame under glass.
2. The form of instructions and their locations shall be in

compliance with the National Building Code of Canada.

#### 46-104 MAINTENANCE

Where batteries are used as a source of the emergency power supply, the batteries shall be kept

- a) in proper condition; and
- b) fully charged at all times

#### 46-106 ARRANGEMENT OF LAMPS

1. Emergency lights shall be arranged so that the failure of any one lamp will not leave in total darkness the area normally illuminated by it.
2. No appliance or lamp, other than those required for emergency purposes, shall be supplied by the emergency circuits.

#### 46-108 WIRING METHOD (SEE APPENDICES B AND G)

1. Except as permitted by Subrule (3), Rule 46-304(3), and Rule 46-400(2), the following conductors shall be installed in accordance with Subrule (2):
  - a) conductors required for operation of life safety systems and installed between an emergency power supply and life safety systems;
  - b) conductors between an emergency power supply and exit signs; and
  - c) conductors between unit equipment and remote lamps.
2. Conductors described in Subrule (1) shall be
  - a) installed in metal raceway of the totally enclosed type;
  - b) incorporated in a cable having a metal armour or sheath;
  - c) installed in rigid non-metallic conduit; or
  - d) installed in electrical non-metallic tubing where embedded in at least 50 mm of masonry or poured concrete.
3. Notwithstanding Subrule (2), conductors installed in buildings of combustible construction in accordance with Rules 12-506 to 12-520 shall be permitted to be
  - (a) run as a non-metallic-sheathed cable; or
  - (b) installed in a totally enclosed non-metallic raceway.
4. Conductors installed in accordance with Subrule (1) shall be kept entirely independent of all other conductors and equipment and shall not enter a luminaire, raceway, box, cabinet, or unit equipment occupied by other conductors except where necessary
  - (a) in transfer switches; and
  - (b) in exit signs and emergency lights supplied from two sources.
5. Conductors between an emergency power supply and any electrical equipment that is not defined as a "life safety system" in accordance with this Section shall not enter a luminaire, raceway, box, or cabinet occupied by conductors installed as described in Subrule (1), except where necessary in busways, splitters, and other similar enclosures provided for connection to the overcurrent device for an emergency power supply described in Rule 46-208(1).

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### EMERGENCY POWER SUPPLY

#### 46-200 EMERGENCY POWER SUPPLY (SEE APPENDIX B)

Rules 46-202 to 46-212 apply only to emergency power supply from central standby power sources.

#### 46-202 TYPES OF EMERGENCY POWER SUPPLY (SEE APPENDIX G)

1. The emergency power supply shall be a standby supply consisting of
  - a) a storage battery of the rechargeable type having sufficient capacity to supply and maintain at not less than 91% of full voltage the total load of the emergency circuits for the time period required by the National Building Code of Canada, but in no case less than 30 min, and equipped with a charging means to maintain the battery in a charged condition automatically; or
  - b) a generator.
2. Automobile batteries and lead batteries not of the enclosed glass-jar type are not considered suitable under Subrule (1) and shall be used only where a deviation has been allowed in accordance with Rule 2-030.
3. Where a generator is used, it shall be
  - a) of sufficient capacity to carry the load;
  - b) arranged to start automatically without failure and without undue delay upon the failure of the normal power supply to any transfer switch connected to this generator; and
  - c) in conformance with CSA C282.

#### 46-204 PROTECTION OF ELECTRICAL CONDUCTORS (SEE APPENDICES B AND G)

All power, control, and communication conductors between an emergency generator as described in Rule 46-202(3), and electrical equipment required to be installed as a part of the emergency power supply and located outside the generator room shall be protected against fire exposure to provide continued operation in compliance with the National Building Code of Canada.

#### 46-206 CONTROL

1. An emergency power supply shall be controlled by automatic transfer equipment that actuates the emergency power supply upon failure of the normal current supply and that is accessible only to authorized persons.
2. An automatic light-actuated device, approved for the purpose, shall be permitted to be used to control separately the lights located in an area that is adequately illuminated during daylight hours without the need for artificial lighting.

#### 46-208 OVERCURRENT PROTECTION

1. The overcurrent device for an emergency power supply shall be coordinated with the overcurrent devices of feeders and branch circuits supplying life safety systems and other electrical equipment connected to the emergency power supply in order to provide selective operation of the branch circuit overcurrent device when a fault occurs in that branch circuit.

2. The branch circuit overcurrent devices shall be accessible only to authorized persons.
3. Notwithstanding Subrule (1), where the overcurrent protective devices are permitted to be connected upstream from the main disconnecting means and overcurrent device connecting the generator to the remainder of the emergency electrical power system in accordance with Rule 32-306 (6) or CSA C282, selective coordination between these overcurrent protective devices shall not be required.

#### 46-210 AUDIBLE AND VISUAL TROUBLE-SIGNAL DEVICES

1. Every emergency power supply shall be equipped with audible and visual trouble-signal devices that warn of derangement of the current source or sources and that indicate when exit signs or life safety systems are supplied from the emergency power supply.
2. Audible trouble signals shall be permitted to be wired so that
  - a) they can be silenced, but a red warning or trouble light shall continue to provide the protective function; and
  - b) when the system is restored to normal, the audible signal will
    - (i) sound, indicating the need to restore the silencing switch to its normal position;
    - or
    - (ii) reset automatically so as to provide sound for any subsequent operation of the emergency power supply.

#### 46-212 REMOTE LAMPS

Lamps shall be permitted to be mounted at some distance from the current supply that feeds them, but the voltage drop in the wiring feeding such lamps shall not exceed 5% of the applied voltage.

### UNIT EQUIPMENT

#### 46-300 UNIT EQUIPMENT (SEE APPENDIX B)

Rules 46-302 to 46-306 apply to individual unit equipment for emergency lighting only.

#### 46-302 MOUNTING OF EQUIPMENT

Each unit equipment shall be mounted with the bottom of the enclosure not less than 2 m above the floor, wherever practicable.

#### 46-304 SUPPLY CONNECTIONS

Each unit equipment shall be mounted with the bottom of the enclosure not less than 2 m above the floor, wherever practicable.

1. Receptacles to which unit equipment is to be connected shall be not less than 2.5 m above the floor, where practicable, and shall be not more than 1.5 m from the location of the unit equipment.
2. Unit equipment shall be permanently connected to the supply if
  - (a) the voltage rating exceeds 250 V; or
  - (b) the marked input rating exceeds 24 A.
3. Where the ratings in Subrule (2) are not exceeded, the unit equipment shall be permitted to be connected using the flexible cord and attachment plug supplied with the equipment.
4. Unit equipment shall be installed in such a manner that it will be automatically actuated upon failure of the power supply to the



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normal lighting in the area covered by that unit equipment.

### **46-306 REMOTE LAMPS (SEE APPENDIX B)**

1. The size of circuit conductors to remote lamps shall be such that the voltage drop does not exceed 5% of the marked output voltage of the unit equipment, or such other voltage drop for which the performance of unit equipment is certified when connected to the specific remote lamp being installed.
2. Remote lamps shall be suitable for remote connection and shall be included in the list of lamps provided with the unit equipment.
3. The number of lamps connected to a single unit equipment shall not result in a load in excess of the watts output rating marked on the equipment for the emergency period required by the National Building Code of Canada, and the load shall be computed from the information in the list of lamps referred to in Subrule (2).

### **EXIT SIGNS**

#### **46-400 EXIT SIGNS (SEE APPENDICES B AND G)**

1. Where exit signs are connected to an electrical circuit, that circuit shall be used for no other purpose.
2. Notwithstanding Subrule (1), exit signs shall be permitted to be connected to a circuit supplying emergency lighting in the area where these exit signs are installed.
3. The exit signs referred to in Subrules (1) and (2) shall be illuminated by an emergency power supply where emergency lighting is required by the National Building Code of Canada.
4. The circuitry serving luminaires used to illuminate exit signs that are not connected to an electrical circuit shall comply with Subrules (1) to (3), as required by the National Building Code of Canada.

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# Fire Code

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### 2.7. SAFETY TO LIFE

#### 2.7.3. EXIT LIGHTING, EXIT SIGNS AND EMERGENCY LIGHTING

##### 2.7.3.1. INSTALLATION AND MAINTENANCE

1. Exit lighting, exit signs and emergency lighting shall be provided in buildings in conformance with the NBC. (See Note A-2.37.3.1.(1).)
2. Exit lighting and exit signs shall be illuminated during times when the building is occupied.
3. Emergency lighting shall be maintained in operating condition, in conformance with Section 6.5.

### 6.5. EMERGENCY POWER SYSTEMS, UNIT EQUIPMENT FOR EMERGENCY LIGHTING, AND EXIT SIGNS

#### 6.5.1 GENERAL

##### 6.5.1.1. INSPECTION, TESTING AND MAINTENANCE

1. Except as provided in Articles 6.5.1.2. to 6.5.1.5., emergency power systems shall be inspected, tested and maintained in conformance with CSA-C282, "Emergency Electrical Power Supply for Buildings."
2. An emergency electrical power supply system for emergency equipment for health care facilities shall be inspected, tested and maintained in conformance with CSA Z32, "Electrical Safety and Essential Electrical Systems in Health Care Facilities." (See Note A-6.5.1.1.(2).)

##### 6.5.1.2. NOTIFICATION

1. When an emergency power system or any part thereof is shut down, the supervisory staff shall be notified in conformance with Section 2.8.

##### 6.5.1.3. INSTRUCTIONS

1. Where an emergency power system is installed, instructions shall be provided for switching on essential loads and for starting the generator when this is not done automatically.

##### 6.5.1.4. RECORDS

1. Written records shall be maintained as required in CSA C282, "Emergency electrical power supply for buildings."

##### 6.5.1.6. INSPECTION OF UNIT EQUIPMENT

1. Self-contained emergency lighting unit equipment shall be inspected at intervals not greater than one month to ensure that
  - a) pilot lights are functioning and not obviously damaged or obstructed,
  - b) the terminal connections are clean, free of corrosion and lubricated when necessary,
  - c) the terminal clamps are clean and tight as per manufacturer's specifications, and
  - d) the battery surface is kept clean and dry.
2. Self-contained emergency lighting unit equipment shall be tested
  - a) at intervals not greater than one month to ensure that the emergency lights will function upon failure of the primary power supply, and
  - b) at intervals not greater than 12 months to ensure that the unit will provide emergency lighting for a duration equal to the design criterion under simulated power failure conditions.
3. After completion of the test required in Clause (2)(b), the charging conditions for voltage and current and the recovery period shall be tested to ensure that the charging system is functioning in accordance with the manufacturer's specifications.

##### 6.5.1.7. INSPECTION OF EMERGENCY LIGHTS

1. Except as provided in Article 6.5.1.6., emergency lights shall be inspected at intervals not greater than 12 months to ensure that they are functional.

##### 6.5.1.8. INSPECTION OF EXIT SIGNS

(See Note A-6.5.1.8.)

1. Except as provided in Sentence (2), exit signs shall be inspected at intervals not greater than 12 months to ensure that the exit signs will be visible upon failure of the primary power supply.
2. Exit signs provided with a battery back-up shall be inspected at intervals
  - a) not greater than one month to ensure the exit signs will be visible upon failure of the primary power supply, and
  - b) not greater than 12 months to ensure the exit signs will be visible for a duration equal to the design criterion upon failure of the primary power supply.

##### A-6.5.1.8.

Exit signs are to be visible by being unobstructed, illuminated and readily identifiable as indicating the location of the means of egress.

# Emergency Electrical Power Supply For Buildings

## Extract from CSA C282: 19

### SECTION 6

#### EMERGENCY ELECTRICAL POWER SUPPLY PLANT

##### 6.11 EMERGENCY LIGHTING

###### 6.11.1

The service room or enclosure containing the emergency electrical power supply and the service room containing the automatic transfer switch(es), shall be equipped with unit equipment for emergency lighting that complies with CSA C22.2 No. 141. Sufficient lamps shall be provided to ensure that a minimum lighting level of 50 lx for 2 h is available at all equipment locations requiring adjustment or service.

Note: This illumination level is significantly greater than that specified in the NBCC, which requires 10 lx for egress route emergency lighting.

###### 6.11.2

Emergency lighting units shall be tested in accordance with Table 2 and CSA C22.2 No. 141.

###### 6.11.3

The emergency lighting unit shall include

- (a) automatic self-diagnostic circuitry; and
- (b) a transient voltage surge suppressor on the supply side of power to the unit.

**Table 2**

**Weekly inspection, test, and maintenance requirements**

**(See Clauses 6.7, 6.8.1, 6.11.2, 7.3.1, 7.6.1, 10.7, 11.1.2, 11.4, 11.5.1, and 11.5.2 and Tables 3 to 5.)**

1. Consumables:

- a) Inspect auxiliary supply tank fuel level (gas pressure) and main tank level (gas pressure) (if applicable). There shall be a minimum supply of 2 h (see Clause 7.3.1).
- b) Inspect lubricating oil level.
- c) Inspect engine coolant level.
- d) Inspect engine, generator, fuel tank(s), and cooling systems for leakage.
- e) Inspect for proper operation of fuel transfer pump (if applicable).
- f) Inspect fuel filter for contamination if filter is equipped with a transparent bowl.

2. Starter system:

- a) Inspect electric starter for cleanliness, mounting, and terminal security.
- b) Air starter:
  - i) Inspect air tanks for pressure.
  - ii) Inspect valves for leakage.
  - iii) Test auxiliary engine and compressor for proper operation.
  - iv) Bleed off any condensation.

# Emergency Electrical Power Supply For Buildings

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### 3. Batteries and charging equipment:

- a) Inspect electrical connections for tightness and evidence of corrosion.
- b) Inspect battery for cleanliness and dryness between terminals.
- c) Inspect charger electrical connections for cleanliness and tightness.

### 4. Engine:

- a) Test lubricant and/or coolant heaters for proper operation.
- b) Inspect governor control linkages and oil level (if applicable).
- c) Inspect fuel pump oil sump (if applicable).
- d) Inspect fan belts for correct tension and wear.

### 5. Control panel:

- a) Inspect control panel covers for security.
- b) Test annunciator lamps to confirm that they are operational.
- c) Inspect control panel settings (ensure that the unit is ready for automatic start-up).
- d) Test remote visual and audible trouble signals at the building fire alarm panel.

### 6. Inspect air control louvre settings to ensure proper operation.

### 7. Test emergency lighting unit(s).

### 8. Verify whether room temperature is above 10 °C.

### 9. Inspect generator and transfer switch room(s) for cleanliness and accessibility to all components of the emergency system.

### 10. Correct all defects found during inspections and tests.

### 11. Record all inspections, tests, and corrective actions in the log (see Clause 11.5.3).

Note: The work described in this Table shall be carried out by a competent person or individuals trained by the system manufacturer.

(Source: Table 2, CSA C282:19, Emergency electrical power supply for buildings. © 2019 Canadian Standards Association. Please visit [store.csagroup.org](http://store.csagroup.org))

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