

# **Part 2**

## **Building and Occupant Fire Safety**

<b>2.1.</b>	<b>General</b>	
2.1.1.	Scope .....	2- 1
2.1.2.	Classification of Buildings .....	2- 1
2.1.3.	Fire Safety Installations .....	2- 1
2.1.4.	Posted Information .....	2- 3
2.1.5.	Portable Extinguishers .....	2- 3
<b>2.2.</b>	<b>Fire Separations</b>	
2.2.1.	General .....	2- 3
2.2.2.	Closures .....	2- 3
<b>2.3.</b>	<b>Interior Finishing, Furnishing and Decorative Materials</b>	
2.3.1.	General .....	2- 4
2.3.2.	Flame Resistance .....	2- 5
<b>2.4.</b>	<b>Fire Hazards</b>	
2.4.1.	Combustible Materials .....	2- 5
2.4.2.	Smoking .....	2- 6
2.4.3.	Open Flames .....	2- 6
2.4.4.	Use of Dangerous Goods .....	2- 7
2.4.5.	Open Air Fires .....	2- 7
2.4.6.	Vacant Buildings .....	2- 7
2.4.7.	Electrical Installations .....	2- 7
<b>2.5.</b>	<b>Fire Department Access to Buildings</b>	
2.5.1.	General .....	2- 7
<b>2.6.</b>	<b>Service Equipment</b>	
2.6.1.	Heating, Ventilating and Air-conditioning .....	2- 8
2.6.2.	Incinerators .....	2- 9
2.6.3.	Electrical Equipment Vaults .....	2-10
<b>2.7.</b>	<b>Safety to Life</b>	
2.7.1.	Means of Egress .....	2-10
2.7.2.	Doors and Means of Egress .....	2-12
2.7.3.	Exit Lighting, Exit Signs and Emergency Lighting .....	2-12
<b>2.8.</b>	<b>Emergency Planning</b>	
2.8.1.	General .....	2-12
2.8.2.	Fire Safety Plan .....	2-13
2.8.3.	Fire Drills .....	2-14
<b>2.9.</b>	<b>Tents and Air-Supported Structures</b>	
2.9.1.	General .....	2-14
2.9.2.	Materials .....	2-14
2.9.3.	Fire Hazards and Control .....	2-15

<b>2.10.</b>	<b>Day-Care Centres</b>	
2.10.1.	Construction .....	2-15
2.10.2.	Supervision of Children .....	2-15
2.10.3.	Combustible Materials .....	2-16
2.10.4.	Fire Safety Measures .....	2-16
<b>2.11.</b>	<b>Boarding and Lodging Houses</b>	
2.11.1.	General .....	2-16
2.11.2.	Fire Safety Measures .....	2-16
<b>2.12.</b>	<b>Covered Malls</b>	
2.12.1.	General .....	2-16
<b>2.13.</b>	<b>Helicopter Landing Areas on Roofs</b>	
2.13.1.	Construction .....	2-17
2.13.2.	Fire Safety Measures .....	2-18
<b>2.14.</b>	<b>Objectives and Functional Statements</b>	
2.14.1.	Objectives and Functional Statements .....	2-18

# **Part 2**

## **Building and Occupant Fire Safety**

### **Section 2.1. General**

#### **2.1.1. Scope**

##### **2.1.1.1. Application**

**1)** This Part provides for the safety of the occupants in existing *buildings*, the elimination or control of fire hazards in and around *buildings*, the installation and maintenance of certain life safety systems in *buildings*, the installation and maintenance of posted signs and information, and the establishing of a fire safety plan in those *occupancies* where it is considered necessary.

#### **2.1.2. Classification of Buildings**

##### **2.1.2.1. Classification**

**1)** For the purpose of applying this Code, every *building* or part thereof shall be classified according to its *major occupancy* in conformance with the NBC. (See Appendix A.)

##### **2.1.2.2. Hazardous Activities**

**1)** Activities that create a hazard and that are not allowed for in the original design shall not be carried out in a *building* unless provisions are made to control the hazard in conformance with this Code. (See Appendix A.)

**2)** No *major occupancy* of Group F, Division 1 shall be contained within a *building* with any *occupancy* classified as an *assembly, care or detention or residential occupancy*.

#### **2.1.3. Fire Safety Installations**

##### **2.1.3.1. Fire Alarm, Standpipe and Sprinkler Systems**

**1)** Fire alarm, standpipe and sprinkler systems shall be provided in all *buildings* where required by and in conformance with the NBC. (See Appendix A.)

**2)** When changes in the use of *buildings* or *floor areas* create a hazard exceeding the criteria for which the fire protection systems were designed, such fire protection systems shall be upgraded to accommodate the increased hazard.

##### **2.1.3.2. Voice Communication Systems**

**1)** A voice communication system or systems integrated with the general fire alarm system shall be provided in *buildings* as specified in Subsection 3.2.6. of the NBC.

##### **2.1.3.3. Smoke Alarms**

**1)** *Smoke alarms* conforming to CAN/ULC-S531, "Smoke Alarms," shall be installed in each *dwelling unit* and, except for *care or detention occupancies* required to have a fire alarm system, in each sleeping room not within a *dwelling unit*.

**2)** *Smoke alarms* within *dwelling units* shall be installed between each sleeping area and the remainder of the *dwelling unit*, and where the sleeping areas are served by hallways, the *smoke alarms* shall be installed in the hallways.

3) *Smoke alarms* shall be installed in conformance with CAN/ULC-S553, "Installation of Smoke Alarms."

4) *Smoke alarms* are permitted to be battery operated.

#### 2.1.3.4. Protection of Combustible Sprinkler Piping

1) Materials installed to protect combustible sprinkler piping, as is required by the NBC, shall be maintained in accordance with the provisions of the same edition of the NBC used for their installation. (See Appendix A.)

#### 2.1.3.5. Special Fire Suppression Systems

1) Where a special fire suppression system is required by this Code, the system shall conform to one of the standards listed in Sentences (3) and (4).

2) If a water-based fire suppression system is not compatible with the fire suppression requirements for certain types of *dangerous goods*, a special fire suppression system conforming to one of the standards listed in Sentence (3) is permitted to be installed in lieu of a water-based system.

3) The design and installation of a special fire suppression system that is not water-based shall conform to one of the following standards:

- a) NFPA 11, "Low-, Medium-, and High-Expansion Foam,"
- b) NFPA 12, "Carbon Dioxide Extinguishing Systems,"
- c) NFPA 12A, "Halon 1301 Fire Extinguishing Systems" (see Appendix A),
- d) NFPA 12B, "Halon 1211 Fire Extinguishing Systems" (see Appendix A),
- e) NFPA 17, "Dry Chemical Extinguishing Systems," or
- f) NFPA 17A, "Wet Chemical Extinguishing Systems."

4) The design and installation of a water-based special fire suppression system shall conform to one of the following standards:

- a) NFPA 15, "Water Spray Fixed Systems for Fire Protection," or
- b) NFPA 16, "Installation of Foam-Water Sprinkler and Foam-Water Spray Systems."

5) Wetting agents used in conjunction with water-based fire suppression systems shall conform to NFPA 18, "Wetting Agents."

6) A hazard for which a fire suppression system has been designed is not permitted to be increased unless the level of fire protection is also commensurately increased.

7) Operating and maintenance instructions for a special fire suppression system shall be posted in proximity to the equipment and, if manual controls are provided, shall be posted near the manual controls.

8) Valves and controls for a special fire suppression system shall be clearly marked to indicate their function and shall be accessible at all times.

#### 2.1.3.6. Design and Installation of Automatic Sprinkler Systems

1) Except as otherwise provided in this Code, an automatic sprinkler system required by this Code shall be designed and installed in conformance with the NBC. (See Appendix A.)

#### 2.1.3.7. Inspection, Maintenance and Testing of Fire Safety Devices

(See Appendix A.)

1) The inspection, maintenance and testing of fire safety devices shall be conducted in accordance with this Code.

2) Where specific references to the inspection, maintenance and testing of fire safety devices are not made in this Code, such devices shall be maintained to ensure they operate as per their design requirements.

**2.1.4. Posted Information****2.1.4.1. Posting**

- 1) Where a sign, notice, placard or information is required to be posted, it shall be
  - a) clearly legible, and
  - b) except as provided in Sentence (2), permanently mounted in a conspicuous or prominent location in proximity to the situation to which it refers.
- 2) Where the situation for which posting is required is of a temporary nature, permanent mounting need not be provided.

**2.1.4.2. Maintenance**

- 1) Every sign, notice, placard or information that is required to be posted shall be maintained in conformance with Article 2.1.4.1.

**2.1.5. Portable Extinguishers****2.1.5.1. Selection and Installation**

- 1) Portable extinguishers shall be installed in all *buildings* except *dwelling units*.
- 2) Except as otherwise required by this Code, portable extinguishers shall be selected and installed in accordance with NFPA 10, "Portable Fire Extinguishers."
- 3) Portable extinguishers in proximity to a fire hazard shall be located so as to be accessible without exposing the operator to undue risk. (See Appendix A.)
- 4) Portable extinguishers that are subject to corrosion shall not be installed in a corrosive environment unless they are provided with appropriate corrosion protection.

**Section 2.2. Fire Separations****2.2.1. General****2.2.1.1. Fire Separations**

- 1) Where a *building* contains more than one *major occupancy*, such *occupancies* shall be separated from each other in conformance with the NBC.
- 2) Where rooms or spaces within a *building* contain a *high-hazard industrial occupancy*, such *occupancy* shall be separated from the remainder of the *building* by *fire separations* in conformance with this Code and the NBC.
- 3) Rooms, corridors, shafts and other spaces shall be separated where practicable by *fire separations* conforming to the NBC.

**2.2.1.2. Damage to Fire Separations**

- 1) Where *fire separations* are damaged so as to affect their integrity, they shall be repaired so that the integrity of the *fire separation* is maintained.

**2.2.2. Closures****2.2.2.1. Openings in Fire Separations**

- 1) Openings in *fire separations* shall be protected with *closures* in conformance with the NBC.
- 2) Where *closures* in *fire separations* are replaced, the replacements shall be in conformance with the NBC.

**2.2.2.2. Damage to Closures**

1) Where *closures* are damaged so as to affect the integrity of their *fire-protection rating*, they shall be repaired so that their integrity is maintained in conformance with Article 2.2.2.1.

**2.2.2.3. Protective Guarding Devices**

- 1) Protective guarding devices shall be
  - a) provided where necessary to prevent damage to the mechanical components of doors in *fire separations*, and
  - b) installed so as not to interfere with the proper operation of the doors.

**2.2.2.4. Inspection and Maintenance**

1) Defects that interfere with the operation of *closures* in *fire separations* shall be corrected, and such *closures* shall be maintained to ensure that they are operable at all times by

- a) keeping fusible links and other heat-actuated devices undamaged and free of paint and dirt,
- b) keeping guides, bearings and stay rolls clean and lubricated,
- c) making necessary adjustments and repairs to door hardware and accessories to ensure proper closing and latching, and
- d) repairing or replacing inoperative parts of hold-open devices and automatic releasing devices.

2) Doors in *fire separations* shall be inspected at intervals not greater than 24 h to ensure that they remain closed unless the door is equipped with a hold-open device conforming to the NBC.

3) Doors in *fire separations* shall be operated at intervals not greater than one month to ensure that they are properly maintained in accordance with Sentence (1), as specified in the fire safety plan prepared in conformance with Section 2.8.

4) *Closures* in *fire separations* shall not be obstructed, blocked, wedged open, or altered in any way that would prevent the intended operation of the *closure*.

5) *Fire dampers* and *fire stop flaps* shall be inspected at intervals not greater than 12 months to ensure that they are in place and are not obviously damaged or obstructed.

## Section 2.3. Interior Finishing, Furnishing and Decorative Materials

**2.3.1. General****2.3.1.1. Interior Finish**

1) The interior finish material that forms part of the interior surface of a floor, wall, *partition* or ceiling shall conform to the NBC.

**2.3.1.2. Movable Partitions and Screens**

1) Movable *partitions* or screens, including acoustical screens, shall have a *flame-spread rating* not greater than that required for the interior finish of the area in which they are located.

**2.3.1.3. Decorative Materials**

1) Decorative materials on walls or ceilings shall have a *flame-spread rating* not greater than that required for the interior finish of the space in which they are located.

**2.3.1.4. Interconnected Floor Spaces**

1) Combustible contents in *interconnected floor spaces* in which the ceiling is more than 8 m above the floor, shall not exceed the limit specified in Subsection 3.2.8. of the NBC.

**2.3.2. Flame Resistance****2.3.2.1. Drapes, Curtains and Decorative Materials**

1) Drapes, curtains and other decorative materials including textiles and films used in *buildings* shall conform to CAN/ULC-S109, "Flame Tests of Flame-Resistant Fabrics and Films," when such drapes, curtains and other decorative materials are used in

- a) any *assembly occupancy* or Group B, Division 1 *care or detention occupancy*,
- b) any lobby or *exit*, or
- c) any open *floor areas* exceeding 500 m<sup>2</sup> in any *business and personal services, mercantile or industrial occupancy*, except when the *floor area* is divided into *fire compartments* not exceeding 500 m<sup>2</sup> in area and separated from the remainder of the *floor area* by *fire separations* having at least a 1 h *fire-resistance rating*.

**2.3.2.2. Flame Retardant Treatments**

1) Flame retardant treatments shall be renewed as often as is required to ensure that the material will pass the match flame test in NFPA 705, "Field Flame Test for Textiles and Films." (See Appendix A.)

**2.3.2.3. Hospital Textiles**

1) Mattresses, bed linen, window drapes and cubicle curtains used in Group B, Division 2 *care or detention occupancies* shall conform to CAN/CGSB-4.162-M, "Hospital Textiles – Flammability Performance Requirements."

**Section 2.4. Fire Hazards****2.4.1. Combustible Materials****2.4.1.1. Accumulation of Combustible Materials**

(See also Sections 3.2. and 3.3.)

1) Combustible waste materials in and around *buildings* shall not be permitted to accumulate in quantities or locations that will constitute an undue fire hazard. (See Appendix A.)

2) Combustible materials, other than those for which the location, room or space is designed, shall not be permitted to accumulate in any part of an elevator shaft, ventilation shaft, *means of egress, service room or service space*. (See Appendix A.)

3) Horizontal concealed spaces, such as crawl spaces and ceiling spaces, shall not be used for the storage of combustible materials.

4) Combustible materials shall not be stored on a roof or adjacent to any *building* so as to create a fire hazard to the *building* or its occupants.

5) Abandoned optical fibre cables and electrical wires and cables with combustible insulation, jackets, or sheathes, and nonmetallic raceways shall be removed from a plenum unless

- a) they are permanently enclosed by the structure or finish of the *building*,
- b) their removal would disturb the structure or finish of the *building*, or
- c) their removal could affect the performance of cables in use.

6) Outdoor storage receptacles, such as dumpsters, used for combustible materials shall be located so that they do not create an undue fire hazard to surrounding buildings. (See Appendix A.)

#### 2.4.1.2. Storage Rooms for Combustible Waste Materials

1) Where rooms are provided for the storage of combustible waste materials, such rooms shall conform to the NBC.

#### 2.4.1.3. Waste Receptacles

1) Materials subject to spontaneous ignition, such as oily rags, shall be deposited in a receptacle conforming to Sentence (4) or be removed from the premises. (See Appendix A.)

2) All ashes shall be stored in receptacles conforming to Sentence (4) and combustible materials shall not be stored with ashes in the same container.

3) Except as permitted in Sentence (4), noncombustible receptacles as required in Sentences (1) and (2) shall not be placed closer than 1 m to combustible materials.

4) A receptacle required by Sentences (1) and (2) shall

- a) be constructed of noncombustible materials,
- b) have a close-fitting, self-closing metal cover, and
- c) if the flooring material upon which it is placed is combustible, have a flanged bottom or legs not less than 50 mm high.

#### 2.4.1.4. Lint Traps for Laundry Equipment

1) Lint traps in laundry equipment shall be cleaned after each use of the equipment.

### 2.4.2. Smoking

#### 2.4.2.1. Smoking Areas

1) Smoking shall not be permitted in areas where conditions are such as to make smoking a fire or explosion hazard.

2) An area where smoking is not permitted in Sentence (1) shall be identified by signs conforming to Article 2.4.2.2.

3) Where smoking is permitted, an adequate number of ash trays shall be provided.

#### 2.4.2.2. Signs

1) Signs prohibiting smoking shall have black lettering not less than 50 mm high with a 12 mm stroke on a yellow background, except that symbols of not less than 150 mm by 150 mm are permitted to be used in lieu of lettering.

### 2.4.3. Open Flames

#### 2.4.3.1. Open Flames in Processions

1) Open flames whose quantity and method of use create a fire hazard shall not be permitted in processions

- a) in *assembly occupancies*, or
- b) in dining areas in Group B, Division 2 *care or detention occupancies*.

#### 2.4.3.2. Flaming Meals and Drinks

1) In Group B, Division 2 *care or detention occupancies*, flaming meals or drinks shall not be served.

2) In *assembly occupancies*, flaming meals or drinks shall be ignited only at the location of serving.

- 3) In *assembly occupancies*, the refuelling of equipment used to flame meals or drinks, or to warm food, shall be carried out
  - a) outside the serving area, and
  - b) away from ignition sources.

- 4) A portable extinguisher having a minimum rating of 5-B:C shall be located on the serving cart or table where flaming meals and drinks referred to in Sentences (2) and (3) are served.

#### 2.4.3.3. Devices Having Open Flames

- 1) Devices having open flames shall be securely supported in noncombustible holders and shall be located or protected so as to prevent accidental contact of the flame with combustible materials.

#### 2.4.4. Use of Dangerous Goods

##### 2.4.4.1. Flammable and Combustible Liquids

- 1) *Flammable liquids* and *combustible liquids* shall be classified, stored and handled in conformance with Part 4.

- 2) Class 1 liquids shall not be used for cleaning purposes except where such cleaning is an essential part of a process.

- 3) Spills of *flammable liquids* or *combustible liquids* within *buildings* shall be removed in conformance with Subsection 4.1.6.

##### 2.4.4.2. Flammable Gases

- 1) Class 2.1 flammable gases shall not be used to inflate balloons.

#### 2.4.5. Open Air Fires

##### 2.4.5.1. Open Air Fires

- 1) Except for fires used for cooking in fireplaces, grills or barbecues, open air fires shall not be set unless appropriate measures are taken to limit their spread. (See Appendix A.)

#### 2.4.6. Vacant Buildings

##### 2.4.6.1. Security

- 1) Vacant *buildings* shall be secured against unauthorized entry. (See Appendix A.)

#### 2.4.7. Electrical Installations

##### 2.4.7.1. Use and Maintenance

- 1) Electrical installations shall be used and maintained so as not to constitute an undue fire hazard.

## Section 2.5. Fire Department Access to Buildings

### 2.5.1. General

#### 2.5.1.1. Access to Building

- 1) Fire department vehicles shall have direct access to at least one face of every *building* by means of a *street*, yard or roadway in conformance with the NBC.

**2.5.1.2. Access Panels and Windows**

1) Access panels or windows provided to facilitate access for firefighting operations shall be maintained free of obstruction.

**2.5.1.3. Access to Roof**

1) Where access to a roof is provided for firefighting purposes, keys shall be provided for locked roof access doors and kept in a location determined in cooperation with the fire department.

**2.5.1.4. Access to Fire Department Connections**

1) Access to fire department connections for sprinkler or standpipe systems by firefighters and their equipment shall be maintained free of obstructions at all times.

**2.5.1.5. Maintenance of Fire Department Access**

1) *Streets, yards and roadways* provided for fire department access shall be maintained so as to be ready for use at all times by fire department vehicles.

2) Vehicles shall not be parked to obstruct access by fire department vehicles and signs shall be posted prohibiting such parking.

## Section 2.6. Service Equipment

**2.6.1. Heating, Ventilating and Air-conditioning****2.6.1.1. Installation**

1) Heating, ventilating and air-conditioning *appliances* and equipment shall be installed in conformance with the NBC.

**2.6.1.2. Coal and Wood Bins**

1) Coal and wood bins shall be located not less than 1.2 m from the *appliance* served.

**2.6.1.3. Hoods, Ducts and Filters**

1) Hoods, ducts and filters subject to accumulations of combustible deposits shall be inspected at intervals not greater than 7 days, and shall be cleaned if the accumulation of such deposits creates a fire hazard.

**2.6.1.4. Chimneys, Flues and Flue Pipes**

1) Every *chimney, flue* and *flue pipe* shall be inspected to identify any dangerous condition

- a) at intervals not greater than 12 months,
- b) at the time of addition of any *appliance*, and
- c) after any *chimney* fire.

(See Appendix A.)

2) *Chimneys, flues* and *flue pipes* shall be cleaned as often as necessary to keep them free from dangerous accumulations of combustible deposits. (See Appendix A.)

3) A *chimney, flue, or flue pipe* shall be replaced or repaired to eliminate

- a) any structural deficiency or decay (see Appendix A), and
- b) all abandoned or unused openings that are not effectively sealed in a manner that would prevent the passage of fire or smoke.

**2.6.1.5. Clearances**

1) Required clearances between *chimneys, flue pipes* or *appliances* and *combustible construction* shall be maintained in conformance with the NBC.

2) Combustible materials shall not be located within the required clearance space surrounding *chimneys, flue pipes* or *appliances*, or adjacent to ash pit or cleanout doors.

#### 2.6.1.6. Operation and Maintenance Procedures

1) Heating, ventilating and air-conditioning systems, including *appliances, chimneys* and *flue pipes*, shall be operated and maintained so as not to create a hazardous condition.

2) Except for self-contained systems within *dwelling units*, disconnect switches for mechanical air-conditioning and ventilating systems shall be operated at intervals not greater than 12 months to establish that the system can be shut down in an emergency.

#### 2.6.1.7. Ventilation Shafts

1) Ventilation shafts shall be used only for ventilating purposes.

#### 2.6.1.8. Repairs and Renovations

1) Work on ducts involving the use of heat-producing devices for cutting, welding or soldering shall not be undertaken before

- a) the system has been shut down,
- b) the duct has been cleaned of any accumulations of combustible deposits, and
- c) any combustible lining and covering material that could be ignited by such work has been removed.

2) Precautions shall be taken, where necessary, to ensure that there is no damage to fuel supply piping or equipment that would result in fuel leakage or a fire hazard during renovations or excavation.

#### 2.6.1.9. Commercial Cooking Equipment

1) Commercial cooking equipment exhaust and fire protection systems shall be designed and installed in conformance with the NBC.

2) Except as required in Sentences (3) to (5), the use, inspection and maintenance of commercial cooking equipment exhaust and fire protection systems shall be in conformance with NFPA 96, "Ventilation Control and Fire Protection of Commercial Cooking Operations."

3) Hoods, grease removal devices, fans, ducts, and other appurtenances shall be cleaned at frequent intervals to prevent surfaces from becoming heavily contaminated with grease or other residues. (See Appendix A.)

4) Flammable cleaning materials or solvents shall not be used for the cleaning of exhaust systems.

5) Instructions for manually operating the fire protection systems shall be posted conspicuously in the kitchen as part of the fire safety plan.

6) Commercial cooking equipment that is certified shall be installed and maintained in conformance with its certification.

7) Uncertified commercial cooking equipment shall be installed and maintained so as not to create a fire hazard.

### 2.6.2. Incinerators

#### 2.6.2.1. Indoor Incinerators

1) The installation and alteration of indoor incinerators shall conform to the NBC.

#### 2.6.2.2. Outdoor Incinerators

1) The design, construction, installation, alteration and maintenance of outdoor incinerators shall conform to NFPA 82, "Incinerators and Waste and Linen Handling Systems and Equipment," except that the *flue* venting an incinerator shall not serve as the chute conveying waste material to the incinerator.

**2.6.2.3. Spark Arresters**

1) Spark arresters installed in conformance with Articles 2.6.2.1. and 2.6.2.2. shall be inspected and cleaned at intervals not greater than 12 months or more frequently where accumulations of debris will adversely affect operations.

2) Burnt-out spark arresters shall be repaired or replaced.

**2.6.3. Electrical Equipment Vaults****2.6.3.1. Use**

1) Electrical equipment vaults shall not be used for storage purposes.

**2.6.3.2. Security**

1) Electrical equipment vaults shall be kept locked so that unauthorized persons will not have access to them.

**Section 2.7. Safety to Life****2.7.1. Means of Egress****2.7.1.1. Means of Egress**

1) *Means of egress* shall be provided in *buildings* in conformance with the NBC.

**2.7.1.2. Open Floor Areas**

1) Aisles in conformance with Sentences (2) to (4) shall be provided in every *floor area* that

- a) is not subdivided into rooms or *suites* served by corridors giving *access to exits*, and
- b) is required by the NBC to have more than one egress doorway.

2) Every required egress doorway shall be served by an aisle that

- a) has a clear width not less than 1 100 mm,
- b) has access to at least one additional egress doorway, and
- c) at every point on the aisle, provides a choice of 2 opposite directions by which to reach an egress doorway.

3) A subsidiary aisle with only a single direction of travel to an aisle described in Sentence (2) is permitted provided it has a clear width not less than 900 mm and a length not greater than

- a) 7.5 m in *business and personal services, mercantile and high-hazard industrial occupancies*,
- b) 10 m in *medium-hazard industrial occupancies*, or
- c) 15 m in *low-hazard industrial occupancies*.

4) Every individual work area in *business and personal services occupancies* shall be located adjacent to an aisle or subsidiary aisle.

**2.7.1.3. Occupant Load**

1) The maximum permissible *occupant load* for any room shall be calculated on the basis of the lesser of

- a) 0.4 m<sup>2</sup> of net floor space per occupant, or
- b) the *occupant load* for which *means of egress* are provided.

(See Appendix A.)

2) The number of occupants permitted to enter a room shall not exceed the maximum *occupant load* calculated in conformance with Sentence (1).

**2.7.1.4. Signs**

1) In *assembly occupancies* with *occupant loads* exceeding 60 persons, the *occupant load* shall be posted in conspicuous locations near the principal entrances to the room or *floor area*.

2) Signs required by the NBC to indicate the *occupant load* for a *floor area* shall be posted in conspicuous locations near the principal entrances to the *floor area*. (See Appendix A.)

3) Signs required in Sentences (1) and (2) shall have lettering not less than 50 mm high with a 12 mm stroke.

**2.7.1.5. Nonfixed Seating**

- 1) When nonfixed seats are provided in *assembly occupancies*,
- except as provided in Sentence (3), the seats shall be arranged in rows having an unobstructed passage of not less than 400 mm between rows measured horizontally between plumb lines from the backs of the seats in one row and the edges of the furthest forward projection of the seats in the next row behind in the unoccupied position,
  - except as provided in Sentence (2), aisles shall be located so that there are not more than 7 seats between every seat and the nearest aisle,
  - except as provided in Sentence (2), the clear width of an aisle in millimetres shall be not less than the greater of 1 100 or the product of the number of seats served by that aisle and 6.1,
  - the width of an aisle is permitted to be reduced to not less than 750 mm when serving 60 seats or fewer,
  - dead-end aisles shall not be longer than 6 m, and
  - except as provided in Sentence (3), when the *occupant load* exceeds 200 persons,
    - the seats in a row shall be fastened together in units of no fewer than 8 seats, or
    - where there are 7 seats or fewer in a row, all the seats in the row shall be fastened together.

- 2) When nonfixed seats are provided in outdoor *assembly occupancies*,
- aisles shall be located so that there are not more than 15 seats between every seat and the nearest aisle, and
  - the clear width of an aisle in millimetres shall be not less than the greater of 1 200 or the product of the number of seats served by that aisle and 1.8.

- 3) When nonfixed seats are provided at tables arranged in rows, the spacing between the nearest edges of tables in 2 successive rows shall be not less than
- 1 400 mm where seating is arranged on both sides of tables (back to back), or
  - 1 000 mm where seating is on one side only.

**2.7.1.6. Maintenance**

- 1) *Means of egress* shall be maintained in good repair and free of obstructions.

**2.7.1.7. Exterior Passageways and Exit Stairs**

1) Exterior passageways and exterior *exit* stairs serving occupied *buildings* shall be maintained free of snow and ice accumulations.

2) Where equipment is provided to melt snow or ice on exterior passageways and exterior *exit* stairs serving an occupied *building*, such equipment shall be maintained in working order or alternative measures shall be taken to comply with Sentence (1).

**2.7.2. Doors and Means of Egress****2.7.2.1. Exit Doors**

- 1) Except as provided in Sentences (2), (3) and (4), all doors forming part of a *means of egress* shall be tested at intervals not greater than one month to ensure that they are operable.
- 2) The safety features of revolving doors shall be tested at intervals not greater than 12 months.
- 3) Sliding doors that are required to swing on their vertical axes in the direction of egress when pressure is applied shall be tested at intervals not greater than 12 months.
- 4) When doors are equipped with electromagnetic locks, these locks shall be tested at intervals not greater than 12 months.

**2.7.2.2. Records**

- 1) Records of tests required in Sentences 2.7.2.1.(2), (3) and (4) shall be retained in conformance with Article 2.2.1.2. of Division C.

**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 Appendix A.)
- 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.

**Section 2.8. Emergency Planning****2.8.1. General****2.8.1.1. Application**

- 1) Fire emergency procedures conforming to this Section shall be provided for
  - a) every *building* containing an *assembly* or a *care or detention occupancy*,
  - b) every *building* required by the NBC to have a fire alarm system,
  - c) demolition and construction sites regulated under Section 5.6.,
  - d) storage areas required to have a fire safety plan in conformance with Articles 3.2.2.5. and 3.3.2.9.,
  - e) areas where *flammable liquids* or *combustible liquids* are stored or handled, in conformance with Article 4.1.5.5., and
  - f) areas where hazardous processes or operations occur, in conformance with Article 5.1.5.1.

**2.8.1.2. Training of Supervisory Staff**

- 1) *Supervisory staff* shall be trained in the fire emergency procedures described in the fire safety plan before they are given any responsibility for fire safety. (See Appendix A.)

**2.8.1.3. Keys and Special Devices**

- 1) Any keys or special devices needed to operate the fire alarm system or provide access to any fire protection systems or equipment shall be readily available to on-duty *supervisory staff*.

## 2.8.2. Fire Safety Plan

### 2.8.2.1. Measures in a Fire Safety Plan

**1)** In *buildings* or areas described in Article 2.8.1.1., a fire safety plan conforming to this Section shall be prepared in cooperation with the fire department and other applicable regulatory authorities and shall include

- a) the emergency procedures to be used in case of fire, including
  - i) sounding the fire alarm (see Appendix A),
  - ii) notifying the fire department,
  - iii) instructing occupants on procedures to be followed when the fire alarm sounds,
  - iv) evacuating occupants, including special provisions for persons requiring assistance (see Appendix A),
  - v) confining, controlling and extinguishing the fire,
- b) the appointment and organization of designated *supervisory staff* to carry out fire safety duties,
- c) the training of *supervisory staff* and other occupants in their responsibilities for fire safety,
- d) documents, including diagrams, showing the type, location and operation of the *building* fire emergency systems,
- e) the holding of fire drills,
- f) the control of fire hazards in the *building*, and
- g) the inspection and maintenance of *building* facilities provided for the safety of occupants.

(See Appendix A.)

**2)** The fire safety plan shall be reviewed at intervals not greater than 12 months to ensure that it takes account of changes in the use and other characteristics of the *building*.

### 2.8.2.2. Care or Detention Occupancies

**1)** A sufficient number of *supervisory staff* shall be on duty in *care or detention occupancies* to perform the tasks outlined in the fire safety plan described in Clause 2.8.2.1.(1)(a).

### 2.8.2.3. Assembly Occupancies

**1)** In Group A, Division 1 *assembly occupancies* containing more than 60 occupants, there shall be at least one *supervisory staff* member on duty in the *building* to perform the tasks outlined in the fire safety plan in Clause 2.8.2.1.(1)(a) whenever the *building* is open to the public.

### 2.8.2.4. High Buildings

**1)** In *buildings* within the scope of Subsection 3.2.6. of the NBC, the fire safety plan shall, in addition to the requirements of Sentence 2.8.2.1.(1), include

- a) the training of *supervisory staff* in the use of the voice communication system,
- b) the procedures for the use of elevators,
- c) the action to be taken by *supervisory staff* in initiating any smoke control or other fire emergency systems installed in a *building* in the event of fire until the fire department arrives,
- d) instructions to the *supervisory staff* and fire department for the operation of the systems referred to in Clause (c), and
- e) the procedures established to facilitate fire department access to the *building* and fire location within the *building*.

### 2.8.2.5. Retention of Fire Safety Plans

**1)** The fire safety plan shall be kept in the *building* for reference by the fire department, *supervisory staff* and other personnel.

**2)** The fire safety plan for a *building* within the scope of Subsection 3.2.6. of the NBC shall be kept at the central alarm and control facility.

**2.8.2.6. Distribution**

1) A copy of the fire emergency procedures and other duties for *supervisory staff*, as laid down in the fire safety plan, shall be given to all *supervisory staff*.

**2.8.2.7. Posting of Fire Emergency Procedures**

1) At least one copy of the fire emergency procedures shall be prominently posted on each *floor area*.

2) In every hotel and motel bedroom, the fire safety rules for occupants shall be posted showing the locations of *exits* and the paths of travel to *exits*.

3) Where a fire alarm system has been installed with no provisions to transmit a signal to the fire department, a sign shall be posted at each manually actuated signalling box requesting that the fire department be notified, and including the telephone number of that department.

**2.8.3. Fire Drills****2.8.3.1. Fire Drill Procedures**

1) The procedure for conducting fire drills shall be determined by the person in responsible charge of the *building*, taking into consideration

- a) the *building occupancy* and its fire hazards,
- b) the safety features provided in the *building*,
- c) the desirable degree of participation of occupants other than *supervisory staff*,
- d) the number and degree of experience of participating *supervisory staff*,
- e) the features of fire emergency systems installed in *buildings* within the scope of Subsection 3.2.6. of the NBC, and
- f) the requirements of the fire department.

(See Appendix A.)

**2.8.3.2. Fire Drill Frequency**

1) Fire drills as described in Sentence 2.8.3.1.(1) shall be held at intervals not greater than 12 months for the *supervisory staff*, except that

- a) in day-care centres and in Group B *major occupancies*, such drills shall be held at intervals not greater than one month,
- b) in schools attended by children, total evacuation fire drills shall be held at least 3 times in each of the fall and spring school terms, and
- c) in *buildings* within the scope of Subsection 3.2.6. of the NBC, such drills shall be held at intervals not greater than 2 months.

**Section 2.9. Tents and Air-Supported Structures****2.9.1. General****2.9.1.1. Tents and Air-Supported Structures**

1) Tents and *air-supported structures* shall be in conformance with the NBC.

**2.9.2. Materials****2.9.2.1. Flame Retardant Treatments**

1) Flame retardant treatments shall be renewed as often as is required to ensure that the material will pass the match flame test in NFPA 705, "Field Flame Test for Textiles and Films." (See A-2.3.2.2.(1) in Appendix A.)

**2.9.3. Fire Hazards and Control****2.9.3.1. Electrical Systems**

- 1) The electrical system in a tent or *air-supported structure* shall be maintained and operated in a safe manner.
- 2) Portable electrical systems shall be inspected for fire hazards and defects shall be corrected before the tent or *air-supported structure* is occupied by the public.
- 3) The electrical system and equipment in a tent or *air-supported structure*, including electrical fuses and switches, shall be inaccessible to the public.
- 4) Cables on the ground in areas used by the public in a tent or *air-supported structure* shall be placed in trenches or protected by covers to prevent damage from traffic.

**2.9.3.2. Combustible Materials**

- 1) Hay, straw, shavings or similar combustible materials other than necessary for the daily feeding and care of animals shall not be permitted within a tent or *air-supported structure* used for an *assembly occupancy*, except that sawdust and shavings are permitted to be used if kept damp.

**2.9.3.3. Smoking and Open Flame Devices**

- 1) Smoking and open flame devices shall not be permitted in a tent or *air-supported structure* while it is occupied by the public.

**2.9.3.4. Fire Watch**

- 1) A person shall be employed to watch for fires when a tent or *air-supported structure* is occupied by more than 1 000 persons.
- 2) A person employed to watch for fires as described in Sentence (1) shall
  - a) be familiar with all fire safety features, including the fire safety plan as provided in conformance with Section 2.8. and the condition of *exits*, and
  - b) patrol the area to ensure that the *means of egress* are kept clear and that requirements of the *authority having jurisdiction* are enforced.

**2.9.3.5. Fire Alarm System**

- 1) Where tents and *air-supported structures* are designed to accommodate more than 1 000 persons, a fire alarm and emergency communication system shall be provided. (See Appendix A.)

**2.9.3.6. Blower Engines**

- 1) Internal combustion engines used to power supplementary blowers required by the NBC shall be operated and maintained in conformance with Section 6.5.

**Section 2.10. Day-Care Centres****2.10.1. Construction****2.10.1.1. Construction**

- 1) Day-care centres shall be constructed in conformance with the NBC.

**2.10.2. Supervision of Children****2.10.2.1. Supervision of Children**

- 1) There shall be at least one staff member for each 10 children 2 years of age and older and, where children under the age of 2 years are cared for, there shall be at least one additional staff member for every 5 such children.

2) Where handicapped children are being cared for in a centre, sufficient staff shall be present to escort the children to safety during the period they are in the centre.

**2.10.3. Combustible Materials****2.10.3.1. Combustible Materials Attached to Walls**

1) Combustible materials, such as artwork and teaching materials, that are attached to walls shall not exceed 20% of the area of such walls.

**2.10.3.2. Waste Receptacles**

1) Waste receptacles shall be made of noncombustible materials.

**2.10.3.3. Flammable and Combustible Liquids**

1) *Flammable liquids* and *combustible liquids* shall be stored in conformance with Part 4 and in areas inaccessible to children.

**2.10.4. Fire Safety Measures****2.10.4.1. Fire Prevention Inspections**

1) Staff members of day-care centres in which more than 10 children are cared for shall conduct fire prevention inspections in conformance with the fire safety plan at intervals not greater than one month.

**Section 2.11. Boarding and Lodging Houses****2.11.1. General****2.11.1.1. Construction**

1) *Buildings* altered or occupied for purposes of providing accommodation for boarders, lodgers or roomers shall conform to the NBC.

**2.11.2. Fire Safety Measures****2.11.2.1. Portable Extinguishers**

1) At least one portable extinguisher having a 2-A rating shall be installed on each *storey* of a *building* described in Article 2.11.1.1.

**Section 2.12. Covered Malls****2.12.1. General****2.12.1.1. Use**

1) Except as permitted in Sentence (2), covered malls designed for ornamental and pedestrian oriented uses only shall not be used for merchandising or public activities.

2) A covered mall referred to in Sentence (1) is permitted to be used for merchandising or public activities on a temporary basis provided

- a) it conforms to Articles 2.12.1.2. to 2.12.1.9., and
- b) the fire safety plan required in Section 2.8. includes additional provisions to offset any hazard that may be created by such activity.

**2.12.1.2. Adequacy of Sprinkler System**

1) Merchandising or public activities in a *sprinklered* covered mall described in Article 2.12.1.1. shall not be permitted where such activity will create a hazard exceeding the design criteria for which the sprinkler system was designed.

**2.12.1.3. Alternatives to Spatial Separation**

1) When a covered mall having a width of not less than 9 m has been provided for the purpose of considering each portion of the *building* separated by the mall as a separate *building*, merchandising or public activities are permitted within the required 9 m width provided alternative protection is installed in conformance with Article 1.2.1.1. of Division A.

**2.12.1.4. Access to Exits**

1) *Access to exits* within a covered mall shall be provided and maintained in conformance with Subsection 2.7.1.

**2.12.1.5. Access to Fire Protection Equipment**

1) Where a covered mall is used for merchandising or public activities, the activity shall be arranged so that access to fire protection equipment, including sprinkler control valves, fire hose stations, portable extinguishers and fire alarm stations, is not restricted.

**2.12.1.6. Decorative Materials**

1) Decorative materials used for merchandising or public activities in a covered mall shall conform to Subsection 2.3.2.

**2.12.1.7. Flammable and Combustible Liquids and Flammable Gases**

1) *Flammable liquids, combustible liquids* and Class 2.1 flammable gases shall not be used or displayed in a covered mall.

**2.12.1.8. Fuelled Equipment**

1) Where a covered mall is used for the display of fuelled equipment, batteries shall be disconnected and caps for fuel tanks shall be locked or secured against tampering.

**2.12.1.9. Propane Fuelled Automotive Vehicles**

1) A propane fuelled automotive vehicle shall not be displayed in a covered mall unless

- the propane fuel tank is permanently installed,
- the fuel system is equipped with an automatic stop-fill valve,
- the fuel cut-off valve is closed,
- fuel tank filling connections are locked or secured against tampering, and
- batteries are disconnected.

## Section 2.13. Helicopter Landing Areas on Roofs

**2.13.1. Construction****2.13.1.1. Construction**

1) Helicopter landing areas on roofs shall be constructed in conformance with the requirements for heliports contained in the "Canadian Aviation Regulations - Part III," published by Transport Canada.

**2.13.2. Fire Safety Measures**

**2.13.2.1. Fire Separations**

1) Areas or rooms communicating with the landing area shall be separated therefrom by a *fire separation* conforming to the NBC.

**2.13.2.2. Fire Alarm**

1) Where a fire alarm system is installed, a manually operated fire alarm station shall be installed on the roof at each *exit* from a helicopter landing area.

2) Helicopter landing areas on roofs shall be provided with telephone extensions or means to notify the fire department in conformance with the NBC.

**2.13.2.3. Smoking**

1) Smoking shall not be permitted on helicopter landing areas on roofs, and signs conforming to Article 2.4.2.2. shall be placed at the *exits* from the rooftop and in the vicinity of the landing area.

**2.13.2.4. Fire Watch**

1) Two persons knowledgeable in the use of firefighting equipment shall be in attendance on the roof deck at each landing area when it is in use.

**2.13.2.5. Refuelling, Repair and Maintenance Operations**

1) Helicopter refuelling, repair and maintenance operations shall not be carried out on helicopter landing areas on roofs except in an emergency.

**2.13.2.6. Inspection of Separators**

1) Aviation fuel and oil separators provided in the drainage system shall be inspected at intervals not greater than 7 days to ensure safe operation and shall be serviced when necessary.

**Section 2.14. Objectives and Functional Statements**

**2.14.1. Objectives and Functional Statements**

**2.14.1.1. Attribution to Acceptable Solutions**

1) For the purposes of compliance with this Code as required in Clause 1.2.1.1.(1)(b) of Division A, the objectives and functional statements attributed to the acceptable solutions in this Part shall be the objectives and functional statements listed in Table 2.14.1.1. (See A-1.1.2.1.(1) in Appendix A.)

**Table 2.14.1.1.**  
**Objectives and Functional Statements Attributed to the Acceptable Solutions in Part 2**  
 Forming Part of Sentence 2.14.1.1.(1)

Acceptable Solutions	Objectives and Functional Statements <sup>(1)</sup>
<b>2.1.2.2. Hazardous Activities</b>	
(1)	[F01-OP1.2]
	[F01-OS1.1]
	[F01,F30,F31,F43,F32,F81-OS3.1,OS3.2,OS3.3,OS3.4]
(2)	[F02,F03-OS1.2] [F10-OS1.5]