

Section 6.9. Fire Safety Systems

6.9.1. General

6.9.1.1. Fire Safety Requirements

- 1) The fire safety characteristics of heating, ventilating and air-conditioning systems shall comply with Subsection 3.6.5.
- 2) Characteristics referred to in Sentence (1) include but are not limited to
 - a) use of *combustible* materials in duct systems,
 - b) *flame-spread ratings* and smoke-developed ratings of duct and pipe materials and coverings,
 - c) installation of equipment relative to property lines, and
 - d) requirements for *fire dampers* and *fire stop flaps*.

6.9.1.2. Hazardous Gases, Dusts or Liquids

- 1) Except as provided in Subsection 6.3.4., systems serving spaces that contain hazardous gases, dusts or liquids shall be designed, constructed and installed to conform to the requirements of the Fire By-law and all applicable by-laws or regulatory enactments or, in the absence of such requirements, to good engineering practice such as that described in the publications of the National Fire Protection Association. (See Note A-6.9.1.2.(1).)
- 2) When indoor piping for Class I *flammable liquids* is installed in a trench, the trench shall be
 - a) provided with positive ventilation to the outdoors, or
 - b) designed to prevent the accumulation of flammable vapours.

6.9.1.3. Commercial Cooking Equipment

- 1) Fire protection systems for commercial cooking equipment referred to in Sentence 6.3.1.7.(1) using vegetable oil or animal fat shall conform to
 - a) ANSI/UL 300, "Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment," or
 - b) ULC/ORD-C1254.6, "Fire Testing of Restaurant Cooking Area Fire Extinguishing System Units."

6.9.2. Dampers and Ductwork

6.9.2.1. Fire Dampers

- 1) *Fire dampers* shall conform to Article 3.1.8.10.

6.9.2.2. Smoke Detectors

- 1) Air handling systems shall incorporate *smoke detectors* where and as required by Article 3.2.4.12.

6.9.2.3. Exhaust Ducts and Outlets

- 1) Where an *exhaust duct* system is used for smoke removal in a high *building*, the requirements of Article 3.2.6.6. shall apply.
- 2) Where *exhaust duct* systems from more than one *fire compartment* are connected to an *exhaust duct* in a vertical service space, the requirements of Article 3.6.3.4. shall apply.

6.9.2.4. Ducts in Exits

- 1) Where ducts penetrate *fire separations* separating *exits* from the remainder of the *building*, they shall be in accordance with Article 3.4.4.4.

6.9.3. Carbon Monoxide Alarms

6.9.3.1. Carbon Monoxide Alarms

- 1) This Article applies to every *building* that contains an *assembly occupancy*, a *care occupancy* with individual *suites* or containing sleeping rooms or bed spaces not within a *suite*, a *residential occupancy*, a *business and personal services occupancy*, or a *mercantile occupancy*, and that
- is served by or contains a fuel-burning *appliance*, or
 - contains a *storage garage*.
- 2) Carbon monoxide (CO) alarms installed in a *residential occupancy* or a *care occupancy* as required by this Article shall
- conform to CAN/CSA-6.19, “Residential Carbon Monoxide Alarming Devices,”
 - be equipped with an integral alarm that satisfies the audibility requirements of CAN/CSA-6.19, “Residential Carbon Monoxide Alarming Devices,”
 - have no disconnect switch between the overcurrent device and the CO alarm, where the CO alarm is powered by the electrical system serving the *suite* (See Note A-6.9.3.1.(2)(c).), and
 - be installed as recommended by the manufacturer.
- 3) Except as permitted by Sentence (9), where a fuel-burning *appliance* is installed in a *suite* of *residential occupancy* or in a *suite* of *care occupancy*, a CO alarm shall be installed
- inside each *sleeping room or bed space*, or
 - outside each *sleeping room or bed space*, within 5m of each bedroom door serving a *sleeping room or bed space*, measured following corridors and doorways.
- 4) Except as permitted by Sentence (9), where a fuel-burning *appliance* serves a *residential occupancy* or a *care occupancy* and is installed in a *service room* that is not in a *suite* of *residential occupancy* nor in a *suite* of *care occupancy*, a CO alarm shall be installed
- either inside each *sleeping room or bed space*, or if outside, within 5m of each door serving a *sleeping room or bed space*, measured following corridors and doorways, in every *suite* of *residential occupancy* or *suite* of *care occupancy* that shares a wall or floor/ceiling assembly with the *service room*, and
 - in the *service room*.
- 5) Except as permitted by Sentence (9), for each *suite* of *residential occupancy* or *suite* of *care occupancy* that shares a wall or floor/ceiling assembly with a *storage garage* or that is adjacent to an attic or crawl space to which the *storage garage* is also adjacent, a CO alarm shall be installed
- inside each *sleeping room or bed space*, or
 - outside each *sleeping room or bed space*, within 5m of each bedroom door serving a *sleeping room or bed space*, measured following corridors and doorways.
- 6) CO alarms installed in an *assembly occupancy*, a *business and personal services occupancy*, or a *mercantile occupancy* as required by this Article shall conform to
- CAN/CSA-6.19, “Residential Carbon Monoxide Alarming Devices,” notwithstanding the scope of that standard,
 - UL 2034, “Standard for Single and Multiple Station Carbon Monoxide Alarms,” notwithstanding the scope of that standard, or
 - good engineering practice.
- (See Note A-6.9.3.1.(6).)
- 7) Except as permitted by Sentence (9), where a fuel-burning *appliance* serves an *assembly occupancy*, *business and personal services occupancy*, or *mercantile occupancy*, a CO alarm shall be,
- where the fuel-burning *appliance* is part of a system that could circulate or distribute CO to a *suite* of *assembly occupancy*, *business and personal services occupancy* or *mercantile occupancy*, installed
 - on each *storey* of each *suite* that may be exposed, and
 - in a *suite* containing an *assembly major occupancy*, each classroom and dedicated gathering room or space,

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and

b) installed in the room or space in which the fuel-burning *appliance* is located.

(See Note A-6.9.3.1.(7).)

8) Except as permitted by Sentence (9), for each suite of *assembly occupancy, business and personal services occupancy, or mercantile occupancy* that shares a wall or floor/ceiling assembly with either a *storage garage* or a *service room* containing a fuel-burning appliance, or that is adjacent to either an attic or crawl space to which the storage garage or a service room containing a fuel-burning *appliance* is also adjacent, a CO alarm shall be installed

a) on each *storey* of the adjacent *suite*,

b) where the adjacent *suite* contains an *assembly major occupancy*, each classroom and dedicated room or space, and

c) in each *service room* containing a fuel-burning *appliance*.

(See Note A-6.9.3.1.(8).)

9) CO detectors are permitted to be installed in lieu of CO alarms required by this Article provided the CO detectors

a) sound audible signals within the location they serve, as described in Sentences (3) to (5), (7) and (8),

b) are installed in conformance with CAN/ULC-S524, “Installation of Fire Alarm Systems,” and

c) form part of the fire alarm system.

6.9.4. Ash Storage

6.9.4.1. Ash Storage Bins

1) Every ash storage bin shall be constructed of *noncombustible* material.

2) Every opening in an ash storage bin shall be protected by a tight-fitting metal door with metal frame securely fastened to the bin.

6.9.4.2. Fireplaces

1) Fireplaces shall conform to the requirements of Section 9.22.