**NBC 2015**

**3.2.4.12. Prevention of Smoke Circulation**

1) If a fire alarm system is installed, an air-handling system shall be designed to prevent the circulation of smoke upon a signal from a duct-type *smoke detector* if the air-handling system

a) serves more than one *storey*,

b) serves more than one *suite* in a *storey*, or

c) serves more than one *fire compartment* required by Sentence 3.3.3.5.(2).

*3.3.3.5 2) Except as permitted by Sentence (3), a floor area described in Sentence (1) shall*

*be divided into not less than 2 fire compartments, each not more than 1 000 m2 in area.*

*3) The floor area on either side of a horizontal exit conforming to Article 3.4.6.10.*

*is permitted to be considered as a fire compartment in applying the requirements of*

*this Article.*

3.2.4.13. Vacuum Cleaning System Shutdown

1) A central vacuum cleaning system in a *building* equipped with a fire alarm system shall be designed to shut down upon actuation of the fire alarm system.

**3.2.6. Additional Requirements for High Buildings**

3.2.6.1. Application

1) 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 storeydesigned 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.

**3.2.6.2. Limits to Smoke Movement**

1) A building to which this Subsection applies shall be designed in accordance with Sentences (2) to (6) and Article 3.2.6.3. to limit the danger to occupants and firefighters from exposure to smoke in a building fire.

2) A building referred to in Sentence (1) shall be designed so that, during a period of 2 h after the start of a fire, each exit stair serving storeys below the lowest exit level will not contain more than 1% by volume of contaminated air from the fire floor, assuming an outdoor temperature equal to the January design temperature on a 2.5% basis determined in accordance with Subsection 1.1.3. (See Note A-3.2.6.2.(2).)

3) Each stairway that serves storeys above the lowest exit level shall have a vent to the outdoors, at or near the bottom of the stair shaft, that a) has an openable area of 0.05 m2 for every door between the stair shaft and a floor area, but not less than 1.8 m2,

b) opens directly to the outdoors or into a vestibule that has a similar opening to the outdoors, and

c) has a door or closure that

i) is openable manually, and

ii) can remain in the open position during a fire emergency.

(See Note A-3.2.6.2.(3).)

4) Measures shall be taken to limit movement of smoke from a fire in a floor area below the lowest exit storey into upper storeys. (See Note A-3.2.6.2.(4).)

5) Except for exhaust fans in kitchens, washrooms and bathrooms in dwelling units, and except for fans used for smoke venting as required by Article 3.2.6.6., air moving fans in a system that serves more than 2 storeys shall be designed and installed so that in the event of a fire these fans can be stopped by means of a manually operated switch at the central alarm and control facility.

6) Except as provided in Article 3.2.4.12. or where there is a conflict with other smoke control measures in the building, air-handling systems used to provide make-up air to public corridors serving suites in a Group C major occupancy shall not shut down automatically upon activation of the fire alarm so as to maintain corridor pressurization.

3.2.6.3. Connected Buildings

1) If a building described in Article 3.2.6.1. is connected to any other building, measures shall be taken to limit movement of contaminated air from one building into another during a fire. (See Note A- 2.6.3.(1).)