Safety Codes Council

PART 6
CODE UPDATE INFORMATION

NBC 2019 AE Div B

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Safety Codes Council
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Safety Codes Council

~~Red strikethrough~~ = deleted text

Blue underline = New text

Review this document in conjunction with the National Building Code-2019 Alberta Edition.

ABC 2014	NBC(AE) 2019	Comments
Section 6.2. Design and Installation	**Section 6.2. ~~Design and Installation~~Planning**	
6.2.1.2. Fire Safety Requirements	**~~6.2.1.2.~~6.9.1.1. Fire Safety Requirements**	Renumbered Article.
6.2.1.3. Structural Movement (See Appendix A.) 1) Mechanical systems and equipment shall be designed and installed to accommodate the maximum relative structural movement provided for in the construction of the *building*. (See Sentence 4.1.3.3.(2), Article 4.1.3.5. and Subsection 4.1.8. for information on the types of structural movements that may be encountered.)	**~~6.2.1.3.~~6.2.1.4. Structural Movement** (See ~~Appendix~~Note A-6.2.1.4.) 1) Mechanical systems and equipment shall be designed and installed to accommodate the maximum relative structural movement provided for in the construction of the *building*. ~~(See Sentence 4.1.3.3.(2), Article 4.1.3.5. and Subsection 4.1.8. for information on the types of structural movements that may be encountered.)~~	Renumbered Article.
6.2.1.4. Installation Standards 1) In addition to the requirements of this Code, the installation of heating, ventilating and air-conditioning equipment, including mechanical refrigeration equipment, and including provisions for mounting, clearances and air supply, shall conform to the requirements of …	**~~6.2.1.4.~~6.2.1.5. Installation Standards** **1)** ~~In addition to the requirements of this Code,~~Except as provided in Articles 6.9.4.2. and 6.3.1.5., the installation of heating~~, ventilating~~ and air-conditioning equipment, including mechanical refrigeration equipment, and including provisions for mounting, clearances and air supply, shall conform to the requirements of …	Renumbered Article.
6.2.1.5. Fireplaces	**~~6.2.1.5.~~6.9.4.2. Fireplaces**	Renumbered Article.
6.2.1.6. Heat Recovery Ventilators	**~~6.2.1.6.~~6.3.1.5. Heat Recovery Ventilators**	Renumbered Article.
6.2.1.7. Outdoor Design Conditions 2) Except as provided in Sentence 6.2.2.4.(1), the outdoor air quality conditions of the geographic area of the *building* site to be used in designing ventilation systems shall be equal to or less than the maximum acceptable levels stated in the National Ambient Air Quality Objectives of the Canadian Environmental Protection Act as follows: a) 70 µg/m3 annually and 120 µg/m^3 daily for particulate matter that is 10 µm or less in diameter (PM_{10}), b) 15 ppb annually, 25 ppb daily, and 82 ppb hourly for ground-level ozone, and c) 13 ppm (15 mg/m^3) in eight hours and 30 ppm (35 mg/m^3) hourly for carbon monoxide (CO), where 1 ppm = 1.146 mg CO/m^3. (See Appendix A.)	**~~6.2.1.7.~~6.2.1.2. Outdoor Design Conditions** 2) Except as provided in Sentence ~~6.2.2.4.(1)~~6.3.2.14.(1), the outdoor air quality conditions of the geographic area of the *building* site to be used in designing ventilation systems shall be equal to or less than the maximum acceptable levels stated in the ~~National Ambient Air Quality Objectives of the Canadian Environmental Protection Act~~ Canada-wide Standards for Particulate Matter (PM) and Ozone as follows: a) ~~70 µg/m^3 annually and 120 µg/m^3~~ a 24 hour average of 30 µg/m3 ~~daily~~ for particulate matter that is ~~10~~2.5 µm or less in diameter ~~(PM10)~~($PM_{2.5}$), and b) ~~15 ppb annually, 25 ppb daily, and 82 ppb hourly~~an 8 hour average of 65 ppb for ground-level ozone.~~, and~~ ~~c) 13 ppm (15 mg/m^3) in eight hours and 30 ppm (35 mg/m^3) hourly for carbon monoxide (CO), where 1 ppm = 1.146 mg CO/m3.~~	Renumbered Article.

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	(See ~~Appendix~~Note A-6.2.1.2.(2).) 3) The outdoor air quality conditions of the local area of the *building* site to be used in designing ventilation systems shall conform to the requirements of Sentence 6.3.2.14.(2). (See Note A-6.2.1.2.(3).)	
6.2.1.8. Installation – General	~~**6.2.1.8.**~~**6.2.1.6. Installation – General**	Renumbered Article.
6.2.1.9. Expansion, Contraction and System Pressure	~~**6.2.1.9.**~~**6.2.1.3. Expansion, Contraction and System Pressure**	Renumbered Article.
6.2.1.10. Asbestos 1) Asbestos shall not be used in air distribution systems or equipment in a form or in a location where asbestos fibres could enter the air supply or return systems.	~~**6.2.1.10.**~~**6.2.1.7. Asbestos** 1) Asbestos shall not be used in ~~air distribution~~HVAC systems or equipment ~~in a form or in a location where asbestos fibres could enter the air supply or return systems~~.	Renumbered Article.
6.2.1.11. Access Openings	~~**6.2.1.11.**~~**6.8.1.1. Access Openings**	Renumbered Article.
6.2.1.12. Heat Exchanger Material 1) If the mixed air temperature upstream of a fuel-fired heat exchanger is less than 6°C, the heat exchanger shall be of corrosion-resistant material.	~~**6.2.1.12. Heat Exchanger Material**~~ ~~1) If the mixed air temperature upstream of a fuel-fired heat exchanger is less than 6°C, the heat exchanger shall be of corrosion-resistant material.~~	Deleted Article.
6.2.1.13. Exit Stairway HVAC 1) An enclosed *exit* stairway that serves more than 1 *storey* shall not be heated, ventilated or air-conditioned using an air system that serves other parts of the *building*.	~~**6.2.1.13. Exit Stairway HVAC**~~ ~~1) An enclosed exit stairway that serves more than 1 storey shall not be heated, ventilated or air-conditioned using an air system that serves other parts of the building.~~	Deleted Article.
6.2.1.14. Indoor Design Parameters	~~**6.2.1.14.**~~**6.2.1.8. Indoor Design Parameters**	Renumbered Article.
6.2.2. Ventilation	**Section 6.3. Ventilation Systems** ~~**6.2.2.**~~**6.3.1. Ventilation**	Created new Subsection for ventilation systems. Renumbered Article.
6.2.2.1. Required Ventilation	~~**6.2.2.1.**~~**6.3.1.1. Required Ventilation**	Renumbered Article.
6.2.2.2. Natural Ventilation 1) Where climatic conditions permit, *buildings* containing *occupancies* other than *residential occupancies* may be ventilated by natural ventilation methods in lieu of mechanical ventilation where engineering data demonstrates that such a method will provide the required ventilation for the type of *occupancy*.	~~**6.2.2.2.**~~**6.3.1.3 Natural Ventilation** 1) Except as permitted by Sentence (2), the ventilation required by Article 6.3.1.1. shall be provided by mechanical ventilation, except that it can be provided by natural ventilation or a combination of natural and mechanical ventilation in a) *buildings* of other than *residential occupancy* having an *occupant load* of not more than one person per 40m^2 during normal use, b) *buildings* of *industrial occupancy* where the nature of the processes contained therein permits or requires the use of large openings in the *building* envelope even during the winter, and c) seasonal *buildings* not intended to be occupied during the winter.	Renumbered Article. Inserted new Sentence (1).

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	~~1~~2) Where climatic conditions permit, *buildings* containing *occupancies* other than *residential occupancies* may be ventilated by natural ventilation methods in lieu of mechanical ventilation where engineering data demonstrates that such a method will provide the required ventilation for the type of *occupancy*.	
6.2.2.3. Ventilation of Storage Garages 1) Except as provided in Sentences (4) and (6), an enclosed *storage garage* shall have a mechanical ventilation system designed to a) limit the concentration of carbon monoxide to not more than 100 parts per million parts of air when measured between 900 mm and 1 200 mm above the floor, or b) limit the concentration of nitrogen dioxide to not more than 3 parts per million parts of air when measured between 900 mm and 1 200 mm above the floor, where the majority of the vehicles stored are powered by diesel-fuelled engines. 6) The requirements of Sentences (1) to (5) are waived for an *open-air storey* in a *storage garage* in which a) no portion of the *storey* is more than 1 m below the adjacent ground level, and b) no tarpaulins, glass or other material are used to close the required openings at any time.	~~6.2.2.3.~~**6.3.1.4. Ventilation of Storage Garages** 1) Except as provided in Sentences (4) and (6), an enclosed *storage garage* for five or more motor vehicles shall have a mechanical ventilation system designed to a) limit the concentration of carbon monoxide to not more than 100 parts per million parts of air when measured between 900 mm and 1 200 mm above the floor, ~~or~~ b) limit the concentration of nitrogen dioxide to not more than 3 parts per million parts of air when measured between 900 mm and 1 200 mm above the floor, where the majority of the vehicles stored are powered by diesel-fuelled engines~~.~~, or c) provide, during operating hours, a continuous supply of outdoor air at a rate of not less than 3.9 L/s for each square metre of *floor area* (see Article 3.3.1.20.). (See also Sentence 3.3.5.4.(4).) (See Note A-6.3.1.4.(1).) 6) The requirements of Sentences (1) to (5) ~~are waived for an~~shall not apply to *open-air storey*s in a *storage garage* ~~in which~~ ~~a) no portion of the storey is more than 1 m below the adjacent ground level, and~~ ~~b) no tarpaulins, glass or other material are used to close the required openings at any time~~.	Renumbered Article.
6.2.2.4. Cleaning Devices	~~6.2.2.4.~~**6.3.2.14. Cleaning Devices** 2) Where contaminants of concern are present in the outdoor air of the local area of the *building* site, ventilation required by Sentence 6.3.1.1.(1) shall be provided by a ventilation system designed to include devices that reduce the concentrations of contaminants to those permitted in the ACGIH's "Industrial Ventilation: A Manual of Recommended Practice for Design" prior to the introduction of outdoor air to indoor occupied spaces.	Renumbered Article. Inserted new Sentence (2).
6.2.2.5. Air Contaminants 1) Air contaminants released within *buildings* shall be removed insofar as possible at their points of origin and shall not be permitted to accumulate in concentrations greater than permitted in the Industrial Ventilation Manual published by the American Conference of Governmental Industrial Hygienists.	~~6.2.2.5.~~**6.3.1.6. Indoor Air Contaminants** (See Note A-6.3.1.6.) 1) Air contaminants of concern that are released within *buildings* shall a) be removed insofar as is possible at their points of origin, and ~~shall~~	Renumbered Article.

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3) Heating, ventilating and air-conditioning systems shall be designed to minimize the growth of micro-organisms. (See Appendix A.)	b) not be permitted to accumulate in concentrations greater than those permitted ~~in the Industrial Ventilation Manual published by the American Conference of Governmental Industrial Hygienists~~by applicable provincial or territorial requirements or, in the absence of such requirements, by good engineering practice such as that described in the publications listed in Sentence 6.2.1.1.(1), measured using the methodology described therein. 3) Heating, ventilating and air-conditioning systems shall be designed to minimize the growth and spread of ~~micro-organisms~~bio-contaminants. ~~(See Appendix A.)~~	
6.2.2.6. Hazardous Gases, Dusts or Liquids	~~**6.2.2.6.**~~**6.9.1.2. Hazardous Gases, Dusts or Liquids**	Renumbered Article.
6.2.2.7. Commercial Cooking Equipment 1) Systems for the ventilation of commercial cooking equipment shall be designed, constructed and installed to conform to NFPA 96, "Ventilation Control and Fire Protection of Commercial Cooking Operations," except as required by Sentence 3.6.3.1.(1) and Article 3.6.4.2. 3) A ventilation system for a *food establishment* shall not have components that allow drips to fall onto surfaces where food is prepared or into food. 4) A ventilation system for a *food establishment* shall have all openings to the exterior of the *building* located and protected to prevent the entry of vermin, dust, dirt and other contaminating material into the *food establishment*. 5) Canopies, hoods and ductwork for a ventilation system exposed within a *food establishment* shall be constructed of stainless steel. 6) A *food establishment* in which food is prepared and the process generates odours, smoke, steam or heat shall have a mechanical ventilation system that includes canopies, ductwork and fans to remove odours, smoke, steam or heat to the exterior of the *building*.	~~**6.2.2.7.**~~**6.3.1.7. Commercial Cooking Equipment** 1) Except as provided in Article 3.6.3.5., s~~S~~ystems for the ventilation of commercial cooking equipment shall be designed, constructed and installed to conform to NFPA 96, "Ventilation Control and Fire Protection of Commercial Cooking Operations~~,~~." ~~except as required by Sentence 3.6.3.1.(1) and Article 3.6.4.2.~~ ~~3~~2) …	Renumbered Article. Sentence (2) relocated to Article 6.9.1.3. Remaining Sentences renumbered.
6.2.2.7. Commercial Cooking Equipment 2) Fire protection systems for commercial cooking equipment referred to in Sentence (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."	**6.9.1.3. Commercial Cooking Equipment** ~~2~~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."	Sentence (2) relocated to Article 6.9.1.3. Sentences (1), and (3) to (6) relocated to Article 6.3.1.7.
6.2.2.8. Crawl Spaces and Attic or Roof Spaces	~~**6.2.2.8.**~~**6.3.1.2. Crawl Spaces and Attic or Roof Spaces**	Renumbered Article.
6.2.2.9. Projection Rooms	~~**6.2.2.9. Projection Rooms**~~	Deleted entire Article.

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1) This Article applies to a projection room in which equipment is used to handle film more than 16 mm in width. 2) The temperature of a projection room shall be thermostatically controllable from within the projection room in order to maintain the temperature of the room at any value within the range of 18°C to 25°C. 3) A projection room exhaust air system shall be independent of any other air system in the *building*.	~~1) This Article applies to a projection room in which equipment is used to handle film more than 16 mm in width.~~ ~~2) The temperature of a projection room shall be thermostatically controllable from within the projection room in order to maintain the temperature of the room at any value within the range of 18°C to 25°C.~~ ~~3) A projection room exhaust air system shall be independent of any other air system in the *building*.~~	
6.2.3. Air Duct Systems	**~~6.2.3.~~6.3.2. Air Duct Systems**	Renumbered Subsection.
N/A	**6.2.3. Solid Fuel Storage**	Inserted new Subsection 6.2.3.
6.2.3.1. Application	**~~6.2.3.1.~~6.3.2.1. Application**	Renumbered Article.
6.2.3.2. Materials in Air Duct Systems 5) A crawl space shall not be used as a supply air *plenum*.	**~~6.2.3.2.~~6.3.2.3. Materials in Air Duct Systems** ~~5) A crawl space shall not be used as a supply air *plenum*.~~	Renumbered Article. Deleted Sentence (5).
6.2.3.3. Connections and Openings in Air Duct Systems 1) Air duct systems shall have a) tight-fitting connections throughout, and b) no openings other than those required for the proper operation and maintenance of the system.	**~~6.2.3.3.~~6.3.2.4. Connections ~~and Openings~~ in Air Duct Systems** 1) Air duct systems shall have ~~a)~~ tight-fitting connections throughout~~, and~~ ~~b) no openings other than those required for the proper operation and maintenance of the system~~.	Renumbered Article. Clause (1)(a) relocated to Sentence (1) of Article 6.3.2.4. Clause 1(b) relocated to Article 6.8.1.2.
6.2.3.3. Connections and Openings in Air Duct Systems 1) Air duct systems shall have a) tight-fitting connections throughout, and b) no openings other than those required for the proper operation and maintenance of the system. 2) Access openings shall be provided in duct systems to allow the removal of material that may accumulate in *plenums* and ducts. 3) Air *supply ducts* shall be continuous from the *furnace* to the supply outlet.	**6.8.1.2. Openings in Air Duct Systems** 1) Air duct systems shall have ~~a) tight-fitting connections throughout, and~~ ~~b)~~ no openings other than those required for the proper operation and maintenance of the system. 2) Access openings shall be provided in duct systems to allow the removal of material that may accumulate in *plenums* and ducts. ~~3) Air supply ducts shall be continuous from the furnace to the supply outlet.~~	Clause (1)(b) and Sentence (2) relocated to Article 6.8.1.2. Deleted Sentence (3). Clause 1(a) relocated to Article 6.3.2.4.
6.2.3.4. Duct Coverings and Linings 1) Coverings, linings and associated adhesives and insulation used in air ducts, *plenums* and other parts of air duct systems shall comply with Article 3.6.5.4. 2) Insulation and coverings on piping used in heating systems shall comply with Article 3.6.5.5. 3) Duct linings shall be installed so that they will not interfere with the operation of volume or balancing dampers or of *fire dampers*, *fire stop flaps* and other *closures*.	**~~6.2.3.4.~~6.3.2.5. Duct Coverings and Linings** (See Note A-6.3.2.5.) 1) Coverings, linings and associated adhesives and insulation used in air ducts, *plenums* and other parts of air duct systems shall comply with Article 3.6.5.4. ~~2) Insulation and coverings on piping used in heating systems shall comply with Article 3.6.5.5.~~ ~~3~~2) Duct linings shall be installed so that they will not interfere with the operation of volume or balancing dampers or of *fire dampers*, *fire stop flaps* and other *closures*.	Renumbered Article. Deleted Sentence (2).

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6.2.3.5. Underground Ducts 1) Underground ducts shall a) be constructed and installed to provide interior drainage from and access to all low points, b) not be connected directly to a sewer, c) be installed and constructed of materials recommended by ASHRAE and SMACNA Standards and HRAI Manuals, and d) be surrounded by concrete not less than 50 mm thick. 2) A clean-out or pump-out connection shall be provided in an underground duct system at every low point of the duct system. 3) If a perimeter warm air duct is installed in or under a slab within 900 mm of ground level, a rigid water-resistant type insulation not less than 25 mm thick with a thermal resistance not less than RSI 4.4 shall be installed between the duct and the outside edge of the *building*.	~~6.2.3.5.~~6.3.2.12. **Underground Ducts** 1) Underground ducts shall a) be constructed and installed to provide interior drainage from and access to all low points, b) not be connected directly to a sewer, and c) be installed and constructed of materials recommended by ASHRAE and SMACNA Standards and HRAI Manuals, ~~and~~ ~~d) be surrounded by concrete not less than 50 mm thick.~~ 2) A clean-out or pump-out connection shall be provided in an underground duct system at every low point of the duct system. ~~3) If a perimeter warm air duct is installed in or under a slab within 900 mm of ground level, a rigid water-resistant type insulation not less than 25 mm thick with a thermal resistance not less than RSI 4.4 shall be installed between the duct and the outside edge of the *building*.~~	Renumbered Article. Deleted Clause (1)(d). Deleted Sentence (3).
6.2.3.6. Fire Dampers	~~6.2.3.6.~~6.9.2.1. **Fire Dampers**	Renumbered Article.
6.2.3.7. Smoke Detectors	~~6.2.3.7.~~6.9.2.2. **Smoke Detectors**	Renumbered Article.
6.2.3.8. Exhaust Ducts and Outlets 8) Where collective venting of multiple installations of laundry-drying equipment is used, the ventilation system shall a) be connected to a common *exhaust duct* that is vented by one central exhaust fan and incorporates one central lint trap, b) include an interlock to activate the central exhaust fan when laundry-drying equipment is in use, c) be provided with makeup air, and d) be provided with a sheet metal duct.	~~6.2.3.8.~~6.3.2.10. **Exhaust Ducts and Outlets** 8) Where collective venting of multiple installations of laundry-drying equipment is used, the ventilation system shall a) be connected to a common *exhaust duct* that is vented by one central exhaust fan and incorporates one central lint trap, b) include an interlock to activate the central exhaust fan when laundry-drying equipment is in use, c) be provided with make-up air, and d) be ~~provided with a~~constructed of sheet metal ~~duct~~material. (See Note A-6.3.2.10.(7) and (8).)	Renumbered Article. Sentences (14) and (15) relocated to Article 6.9.2.3.
6.2.3.8. Exhaust Ducts and Outlets 14) Where an *exhaust duct* system is used for smoke removal in a high *building*, the requirements of Article 3.2.6.6. shall apply. 15) 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.	**6.9.2.3. Exhaust Ducts and Outlets** ~~14~~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. ~~15~~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.	Sentences (14) and (15) relocated to Article 6.9.2.3.
6.2.3.9. Interconnection of Systems	~~6.2.3.9.~~6.3.2.7. **Interconnection of Systems**	Renumbered Article.

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3) *Exhaust ducts* referred to in Sentence 6.2.3.8.(10) may exhaust through an enclosed *storage garage* or *boiler* room prior to exhausting to the outdoors, provided a) the exhaust system runs continuously, b) the capacity of the exhaust system is equal to or exceeds the volume of the exhaust entering the *storage garage* or *boiler* room, and c) a leakage rate 1 smoke/*fire damper* rated in accordance with CAN/ULC-S112.1, "Leakage Rated Dampers for Use in Smoke Control Systems," is provided near the duct outlet location in the *storage garage* or *boiler* room to prevent air from the *storage garage* or *boiler* room from entering the exhaust ductwork system in the event the *building*'s exhaust fan is shut down.	3) *Exhaust ducts* referred to in Sentence ~~6.2.3.8.(10)~~6.3.2.10.(10) ~~may~~are permitted to exhaust through an enclosed *storage garage* ~~or boiler room~~ prior to exhausting to the outdoors, provided a) the *storage garage's* exhaust system runs continuously, b) the capacity of the *storage garage's* exhaust system is equal to or exceeds the volume of the exhaust entering the ~~*storage* garage *or boiler room*~~, and c) a leakage rate 1 smoke/*fire damper* rated in accordance with CAN/ULC-S112.1, "Leakage Rated Dampers for Use in Smoke Control Systems," is provided near the duct outlet location in the *storage garage* ~~*or boiler room*~~ to prevent air from the *storage garage* ~~*or boiler*~~ room from entering the exhaust ductwork system in the event the *building*'s exhaust fan is shut down.	
6.2.3.10. Ducts in Exits	~~**6.2.3.10.**~~**6.9.2.4. Ducts in Exits**	Renumbered Article.
6.2.3.11. Makeup Air 3) Where makeup air facilities introduce air directly from the outdoors into the *building* in winter, they shall incorporate means of preheating that air to maintain the indoor design temperature.	~~**6.2.3.11.**~~**6.3.2.8. Makeup Air** 3) Where makeup air facilities are intended to introduce air directly from the outdoors ~~into~~to occupied parts of the *building* in winter, they shall incorporate means of ~~preheating~~tempering that air to maintain the indoor design temperature.	Renumbered Article.
6.2.3.12. Supply, Return, Intake and Exhaust Air Openings 1) Supply, return and exhaust air openings located less than 2 m above the floor in rooms or spaces in *buildings* shall be protected by grilles having openings of a size that will not allow the passage of a 15 mm diam sphere. 2) Outdoor air intakes and exhaust outlets on the exterior of *buildings* shall be designed or located so that air entering the *building* system does not contain more contaminants than the normal exterior air of the locality in which the *building* is situated. 3) Exterior openings for outdoor air intakes and exhaust outlets shall be shielded from the entry of snow and rain and shall be fitted with corrosion-resistant screens of mesh having openings not larger than 15 mm, except where experience has shown that climatic conditions require larger openings to prevent the screen openings from icing over. 4) Screens required in Sentence (3) shall be accessible for maintenance. 5) *Combustible* grilles, diffusers and other devices covering supply, return, intake and exhaust openings shall comply with Article 3.6.5.7.	~~**6.2.3.12.**~~**6.3.2.9. Supply, Return, Intake and Exhaust Air Openings** 1) Supply, return and exhaust air openings located less than 2 m above the floor in rooms or spaces in *buildings* shall be protected by grilles having openings of a size that will not allow the passage of a 15 mm diam sphere. ~~2) Outdoor air intakes and exhaust outlets on the exterior of *buildings* shall be designed or located so that air entering the *building* system does not contain more contaminants than the normal exterior air of the locality in which the *building* is situated.~~ 2) Outdoor air intakes shall be located so that a) the quality of the air entering the *building* complies with Sentences 6.2.1.2.(2) and (3), and b) they are separated a minimum distance from sources of contaminants in accordance with Table 6.3.2.9. **Table 6.3.2.9.** **Minimum Distances of Air Intakes from Sources of Contaminants** **Forming Part of Sentence 6.3.2.9.(2)** Source of Contaminants | Minimum Distance of Outdoor Air Intake, m	Renumbered Article. Deleted Sentence (2). Inserted new Sentences (2) and (3). Remaining Sentences renumbered.

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	Garage entry of a garage for 5 or more motor vehicles, automobile loading area and drive-in queue — 4.5 Truck loading area or dock, and bus parking — 7.6 Driveway, street, and parking space — 1.5 Thoroughfare, arterial road, freeway, and highway — 7.6 Garbage storage/pick-up area and dumpsters — 4.5 Discharge from evaporative cooling tower, evaporative fluid cooler and evaporative condenser — 7.6 Sanitary vent — 3.5 Kitchen cooking exhaust — 3.0 Vent for combustion products — 3.0 3) Outdoor air intakes shall be installed not less than 0.3 m above roofs, landscape grades or other surfaces, taking into account anticipated snow accumulation levels. ~~3~~4) Exterior openings for outdoor air intakes and exhaust outlets shall be shielded from the entry of snow and rain and shall be fitted with corrosion-resistant screens of mesh having openings not larger than 15 mm, except where experience has shown that climatic conditions require larger openings to prevent the screen openings from icing over. ~~4~~5) Screens required in Sentence (~~3~~4) shall be accessible for maintenance. ~~5~~6) *Combustible* grilles, diffusers and other devices covering supply, return, intake and exhaust openings shall comply with Article 3.6.5.7.	
6.2.3.13. Filters and Odour Removal Equipment 1) Air filters for air duct systems shall conform to the requirements for Class 2 air filter units as described in ULC-S111, “Fire Tests for Air Filter Units.” 2) When electrostatic-type filters are used, they shall be installed so as to ensure that the electric circuit is automatically de-energized when filter access doors are opened or, in *dwelling units*, when the *furnace* circulation fan is not operating.	~~**6.2.3.13.**~~**6.3.2.13. Filters** ~~**and Odour Removal Equipment**~~ 1) Air filters for air duct systems shall conform to the requirements for Class 2 air filter units as described in ULC-S111, “Fire Tests for Air Filter Units.” 2) When electrostatic-type filters are used, they shall be installed so as to ensure that the electric circuit is automatically de-energized when filter access doors are opened or, in *dwelling units*, when the *furnace* circulation fan is not operating.	Renumbered Article. Sentences (3) and (4) relocated to Article 6.8.1.3.
6.2.3.13. Filters and Odour Removal Equipment 3) When odour removal equipment of the adsorption type is used, it shall be a) installed to allow access so that adsorption material can be reactivated or renewed, and b) protected from dust accumulation by air filters installed on the inlet side. 4) Facilities for flushing and drainage shall be provided where filters are designed to be washed in place.	**6.8.1.3. Odour Removal Equipment** ~~3~~1) When odour removal equipment of the adsorption type is used, it shall be a) installed to allow access so that adsorption material can be reactivated or renewed, and b) protected from dust accumulation by air filters installed on the inlet side. ~~4~~2) Facilities for flushing and drainage shall be provided where filters are designed to be washed in place.	Sentences (3) and (4) relocated to Article 6.8.1.3.

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6.2.3.14. Air Washers and Evaporative Cooling Sections or Towers 1) The filter and water evaporation medium of every air washer and evaporative cooling section enclosed within a *building* shall be made of *noncombustible* material. 2) Sumps for air washers and evaporative cooling sections shall be constructed and installed so that they can be flushed and drained. 3) Evaporative cooling sections or towers shall comply with the requirements of NFPA 214, "Water-Cooling Towers."	~~**6.2.3.14. Air Washers and Evaporative Cooling Sections or Towers**~~**6.3.2.16. Evaporative Air Coolers, Misters, Atomizers, Air Washers and Humidifiers** 1) The filter and water evaporation medium of every air washer and evaporative ~~cooling section~~air cooler enclosed within a *building* shall be made of *noncombustible* material. 2) Sumps for air washers and evaporative ~~cooling sections~~air coolers shall be constructed and installed so that they can be flushed and drained. 3) Evaporative ~~cooling sections or towers shall comply with the requirements of NFPA 214, "Water-Cooling Towers~~air coolers, misters, atomizers, air washers and humidifiers shall be designed in accordance with Sections 8 and 9 of ASHRAE Guideline 12, "Minimizing the Risk of Legionellosis Associated with Building Water Systems."	Renumbered Article.
6.2.3.15. Fans and Associated Air-Handling Equipment	~~**6.2.3.15.**~~**6.3.2.17. Fans and Associated Air-Handling Equipment**	Renumbered Article.
6.2.3.16. Vibration Isolation Connectors	~~**6.2.3.16.**~~**6.3.2.18. Vibration Isolation Connectors**	Renumbered Article.
6.2.3.17. Tape	~~**6.2.3.17.**~~**6.3.2.19. Tape**	Renumbered Article.
6.2.3.18. Insulation and Coverings 1) Insulation and coverings on pipes shall comply with Article 3.6.5.5.	~~**6.2.3.18.**~~**6.5.1.1. Insulation and Coverings** (See Note A-6.3.2.5.) 1) Insulation and coverings on pipes shall comply with Article 3.6.5.5. 2) *** See 6.2.9.2. in ABC 2014 column below. *** 3) *** See 6.2.9.2. in ABC 2014 column below. ***	Renumbered Article. Sentence 6.5.1.1.(2) and (3) relocated from Article 6.2.9.2.
6.2.3.19. Clearance of Ducts and Plenums	~~**6.2.3.19.**~~**6.3.2.6. Clearance of Ducts and Plenums**	Renumbered Article.
6.2.3.20. Return-Air System	~~**6.2.3.20.**~~**6.3.2.11. Return-Air System**	Renumbered Article.
6.2.4. Carbon Monoxide Alarms	~~**6.2.4.**~~**6.9.3. Carbon Monoxide Alarms**	Renumbered Subsection.
6.2.4.1. Carbon Monoxide Alarms	~~**6.2.4.1.**~~**6.9.3.1. Carbon Monoxide Alarms**	Renumbered Article.
6.2.5. Heating Appliances, General	~~**6.2.5.**~~**6.4.1. Heating Appliances, General**	Renumbered Article.
6.2.5.1. Location of Appliances	~~**6.2.5.1.**~~**6.4.1.1. Location of Appliances**	Renumbered Article.
6.2.5.2. Appliances Installed Outside the Building	~~**6.2.5.2.**~~**6.4.1.2. Appliances Installed Outside the Building**	Renumbered Article.
6.2.6. Incinerators	~~**6.2.6.**~~**6.2.2. Incinerators**	Renumbered Subsection.

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6.2.6.1. Applicable Standard	~~6.2.6.1.~~6.2.2.1. **Applicable Standard**	Renumbered Article.
6.2.7. Unit Heaters	~~6.2.7.~~6.4.2. **Unit Heaters**	Renumbered Subsection.
6.2.7.1. Clearances	~~6.2.7.1.~~6.4.2.1. **Clearances**	Renumbered Article.
6.2.8. Radiators and Convectors	~~6.2.8.~~6.4.3. **Radiators and Convectors**	Renumbered Subsection.
6.2.8.1. Lining or Backing	~~6.2.8.1.~~6.4.3.1. **Lining or Backing**	Renumbered Article.
6.2.9. Piping for Heating and Cooling Systems	~~6.2.9.~~6.7.1. **Piping for Heating and Cooling Systems**	Renumbered Subsection.
6.2.9.1. Piping Materials and Installation	~~6.2.9.1.~~6.7.1.1. **Piping Materials and Installation**	Renumbered Article.
6.2.9.2. Insulation and Coverings 1) Insulation and coverings on pipes shall be composed of material that will withstand deterioration from softening, melting, mildew and mould at the operating temperature of the system. 2) Exposed piping or equipment subject to human contact shall be insulated so that the temperature of the exposed surface does not exceed 70°C. (See Appendix A.)	~~6.2.3.18.~~6.5.1.1. **Insulation and Coverings** (See Note A-6.3.2.5.) 1) *** See 6.2.3.18. in ABC 2014 column above. *** ~~1~~2) Insulation and coverings on pipes shall be composed of material that will withstand deterioration from softening, melting, mildew and mould at the operating temperature of the system. ~~2~~3) Exposed piping or equipment subject to human contact shall be insulated so that the temperature of the exposed surface does not exceed 70°C. (See ~~Appendix~~Note A-6.5.1.1.(3).)	Relocated to Article 6.5.1.1. as Sentences (2) and (3). Sentence 6.5.1.1.(1) relocated from Article 6.2.3.18.
6.2.9.3. Clearances	~~6.2.9.3.~~6.7.1.2. **Clearances**	Renumbered Article.
6.2.9.4. Surface Temperature	~~6.2.9.4.~~6.7.1.3. **Surface Temperature**	Renumbered Article.
6.2.9.5. Protection	~~6.2.9.5.~~6.7.1.4. **Protection**	Renumbered Article.
6.2.9.6. Piping in Shafts	~~6.2.9.6.~~6.7.1.5. **Piping in Shafts**	Renumbered Article.
6.2.10. Refrigerating Systems and Equipment for Air-conditioning	~~6.2.10.~~6.6.1. **Refrigerating Systems and Equipment for Air-conditioning**	Renumbered Subsection.
6.2.10.1. Cooling Units	~~6.2.10.1.~~6.6.1.1. **Cooling Units**	Renumbered Article.
6.2.11. Storage Bins	~~6.2.11.~~6.7.2. **Storage Bins**	Renumbered Subsection
6.2.11.1. Storage Bins 1) Service pipes passing through a storage bin for solid fuel shall be protected or so located as to avoid damage to the pipes.	~~6.2.11.1.~~6.7.2.1. **Storage Bins** 1) Service pipes passing through a storage bin for solid fuel shall be protected or so located as to avoid damage to the pipes.	Renumbered Article. Sentences (3) and (4) relocated to Article 6.2.3.1.

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2) Except for fuel-thawing pipes, every pipe designed to operate at a temperature of 50°C or above shall be located where solid fuel cannot be stored in contact with it.	2) Except for fuel-thawing pipes, every pipe designed to operate at a temperature of 50°C or above shall be located where solid fuel cannot be stored in contact with it	
6.2.11.1. Storage Bins 3) A storage bin for solid fuel shall not be located above a sewer opening or drain opening. 4) Storage bins for solid fuel shall be designed and constructed so that the air temperature in the bin or the surface temperature of any part of the floor or walls is below 50°C.	**6.2.3.1. Solid Fuel Storage Bins** ~~3~~1) A storage bin for solid fuel shall not be located above a sewer opening or drain opening. ~~4~~2) Storage bins for solid fuel shall be designed and constructed so that the air temperature in the bin or the surface temperature of any part of the floor or walls is below 50°C.	Sentences 6.2.11.1.(3) and (4) relocated to Article 6.2.3.1.
6.2.11.2. Ash Storage Bins	~~**6.2.11.2.**~~**6.9.4.1. Ash Storage Bins**	Renumbered Article.
6.2.12. Ventilation for Laboratories	~~**6.2.12.**~~**6.3.4. Ventilation for Laboratories**	Renumbered Subsection.
6.2.12.1. Application	~~**6.2.12.1.**~~**6.3.4.1. Application**	Renumbered Article.
6.2.12.2. General Ventilation	~~**6.2.12.2.**~~**6.3.4.2. General Ventilation**	Renumbered Article.
6.2.12.3. Enclosure Exhaust Ventilation	~~**6.2.12.3.**~~**6.3.4.3. Enclosure Exhaust Ventilation**	Renumbered Article.
6.2.12.4. Enclosure Construction	~~**6.2.12.4.**~~**6.3.4.4. Enclosure Construction**	Renumbered Article.
Section 6.3. Chimneys and Venting Equipment	~~**Section 6.3.**~~**6.3.3. Chimneys and Venting Equipment**	Section 6.3. renumbered to Subsection 6.3.3.
6.3.1. General	~~**6.3.1. General**~~	Deleted Subsection.
6.3.1.1. Requirement for Venting	~~**6.3.1.1.**~~**6.3.3.1. Requirement for Venting** 2) Except as provided in Article 6.2.1.5., vented products of combustion, other than those referred to in Sentence (1), shall be discharged away from the *building*, so as not to re-enter it, to a distance not less than a) 2.15 m above sidewalks and driveways, b) 3 m from outdoor air intakes, c) 3 m horizontally or vertically from doors and operable windows, and d) 3 m horizontally or vertically from occupiable outdoor spaces, excluding maintenance spaces. (See Note A-6.3.3.1.(2).)	Renumbered Article. Inserted new Sentence (2).
6.3.1.2. Masonry or Concrete Chimneys	~~**6.3.1.2.**~~**6.3.3.2. Masonry or Concrete Chimneys**	Renumbered Article.
6.3.1.3. Metal Smoke Stacks	~~**6.3.1.3.**~~**6.3.3.3. Metal Smoke Stacks**	Renumbered Article.

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6.3.1.4. Common Flue 1) A *chimney flue* serving a fireplace, incinerator or *slow-burning solid-fuel-fired appliance* shall not serve any other *appliance*.	~~**6.3.1.4. Common Flue**~~ ~~1) A *chimney flue* serving a fireplace, incinerator or *slow-burning solid-fuel-fired appliance* shall not serve any other *appliance*.~~	Deleted Article.
6.3.1.5. Access Ladders	~~**6.3.1.5.**~~**6.3.3.4. Access Ladders**	Renumbered Article.
N/A	**6.3.2.2. Drain Pans** 1) Dehumidifying cooling coil assemblies and condensate-producing heat exchangers shall be equipped with drain pans beneath them that are a) designed in accordance with Section 5.11, Drain Pans, of ANSI/ASHRAE 62.1, "Ventilation for Acceptable Indoor Air Quality," b) provided with an outlet that is piped to the outside of the airstream in a location where condensate can be eliminated, and c) installed so that water drains freely from the pan.	Inserted new Article.
N/A	**6.3.2.15. Evaporative Cooling Towers, Evaporative Fluid Coolers and Evaporative Condensers** 1) Discharge from evaporative cooling towers to ventilation air intakes shall comply with a) Sentence 6.3.2.9.(2), and b) CAN/CSA-Z317.2, "Special Requirements for Heating, Ventilation, and Air-Conditioning (HVAC) Systems in Health Care Facilities." 2) The distance between the air intakes of evaporative cooling towers, evaporative fluid coolers and evaporative condensers in relation to kitchen exhaust outlets, vegetation or other sources of organic matter shall be not less than 4.6 m. 3) Make-up water connections shall be equipped with backflow prevention devices that conform to Article 2.6.2.1. of Division B of the NPC. 4) Water treatment equipment for biological growth control shall be provided in accordance with Sub-Section 7.6.2. of ASHRAE Guideline 12, "Minimizing the Risk of Legionellosis Associated with Building Water Systems." 5) Drains, overflows and blow-downs shall be connected to the *building*'s drainage system in accordance with Clause 2.4.2.1.(1)(e) of Division B of the NPC. 6) Evaporative cooling towers, evaporative fluid coolers and evaporative condensers shall be provided with access ports, service platforms, fixed ladders and restraint connections to allow visual inspection, maintenance and testing.	Inserted new Article.
Section 6.4. Objectives and Functional Statements	**Section ~~6.4.~~6.10. Objectives and Functional Statements**	Renumbered Section.
6.4.1. Objectives and Functional Statements	**~~6.4.1.~~6.10.1. Objectives and Functional Statements**	Renumbered Subsection.
6.4.1.1. Attributions to Acceptable Solutions	**~~6.4.1.1.~~6.10.1.1. Attributions to Acceptable Solutions**	Renumbered Article.

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N/A	Section 6.4. Heating Systems	Inserted new Section.
N/A	Section 6.5. Thermal Insulation Systems	Inserted new Section.
N/A	6.5.1. Insulation	Inserted new Subsection.
N/A	Section 6.6. Refrigeration and Cooling Systems	Inserted new Section.
N/A	Section 6.7. Piping Systems	Inserted new Section.
N/A	Section 6.8. Equipment Access	Inserted new Section.
N/A	6.8.1. Openings	Inserted new Subsection.
N/A	Section 6.9. Fire Safety Systems	Inserted new Section.
N/A	6.9.1. General	Inserted new Subsection.
N/A	6.9.2. Dampers and Ductwork	Inserted new Subsection.
N/A	6.9.4. Ash Storage	Inserted new Subsection.