~~Red Strikethrough~~ = deleted text
Blue underline = New text

This material is for educational purposes and does not make or imply any assurance or guarantee with respect to the life expectancy, durability or operating performance of materials, appliances, systems and equipment referred to in the information.

Review this document in conjunction with the National Building Code – 2023 Alberta Edition

PART 6 – CODE UPDATE INFORMATION		
NBC(AE) 2019	**NBC(AE) 2023**	**Comments**
6.2.1.1. Good Engineering Practice **2)** Where a health or safety hazard to a worker could result from the production or dissemination of airborne contaminants or from oxygen deficiency in the air, the ventilation systems serving these spaces shall conform to the Occupational Health and Safety Act and its Regulations.	**6.2.1.1. Good Engineering Practice** **1)** Heating, ventilating and air-conditioning systems, including mechanical refrigeration equipment, shall be designed, constructed and installed in conformance with good engineering practice such as that described in, but not limited to, … j) ASHRAE Guideline 12, "Minimizing the Risk of Legionellosis Associated with Building Water Systems." ~~**2)** Where a health or safety hazard to a worker could result from the production or dissemination of airborne contaminants or from oxygen deficiency in the air, the ventilation systems serving these spaces shall conform to the Occupational Health and Safety Act and its Regulations.~~	Sentence (2) deleted.
6.2.1.5. Installation Standards **1)** Except as provided in Articles 6.9.4.2. and 6.3.1.5., the installation of heating and air-conditioning equipment, including mechanical refrigeration equipment, and including provisions for mounting, clearances and air supply, shall conform to the requirements of … g) the Environmental Protection and Enhancement Act and its Regulations.	**6.2.1.5. Installation Standards** **1)** Except as provided in Articles 6.9.4.2. and ~~6.3.1.5~~ 6.3.1.4., the installation of heating and air-conditioning equipment, including mechanical refrigeration equipment, and including provisions for mounting, clearances and air supply, shall conform to the requirements of … ~~g) the Environmental Protection and Enhancement Act and its Regulations~~.	
6.2.1.8. Indoor Design Parameters **2)** Except as permitted by Sentence (1), heating facilities capable of maintaining an indoor air temperature of 22°C at the outside winter design temperature shall be provided a) for all sleeping rooms in a *care*, *treatment* or *detention occupancy*, and b) in a *building* used for *residential occupancy* intended for use in the winter months on a continuing basis.	**6.2.1.8. Indoor Design Parameters** **2)** ~~Except as permitted by Sentence (1),~~ Heating facilities capable of maintaining an indoor air temperature of 22°C at the outside winter design temperature shall be provided a) for all sleeping rooms in a *care*, *treatment* or *detention occupancy*, and b) in a *building* used for *residential occupancy* ~~intended for use in the winter months on a continuing basis~~.	
6.3.1.1. Required Ventilation **2)** Except in *storage garages* covered by Article 6.3.1.4., the rates at which outdoor air is supplied in *buildings* by ventilation systems shall be not less than the rates required by ANSI/ASHRAE 62, "Ventilation for Acceptable Indoor Air Quality" (except Addendum n). **3)** Self-contained heating-season mechanical ventilation systems serving only one *dwelling unit* shall comply with a) this Part, or b) Subsection 9.32.3.	**6.3.1.1. Required Ventilation** **2)** Except in *storage garages* covered by Article ~~6.3.1.4.~~ 6.3.1.3., ~~the rates at which~~ outdoor air ~~is~~ shall be supplied ~~in~~ to *buildings* ~~by~~ for ventilation ~~systems shall be not less than the rates required by~~ purposes in accordance with one of the following Sections of ANSI/ASHRAE 62.1, "Ventilation for Acceptable Indoor Air Quality" ~~(except Addendum n)~~ as a minimum: a) Section 6.2, Ventilation Rate Procedure, excluding the exception stated in Section 6.2.7.1.2 and note H of Table 6.2.2.1, b) Section 6.3, Indoor Air Quality Procedure, or c) Section 6.4, Natural Ventilation Procedure, excluding *residential occupancies*. **3)** Except in *storage garages* covered by Article 6.3.1.3., exhaust ventilation shall be provided in accordance with Section 6.5, Exhaust Ventilation, of ANSI/ASHRAE 62.1, "Ventilation for Acceptable Indoor Air Quality," as a minimum. ~~3~~**4)** Self-contained heating-season mechanical ventilation systems serving only one *dwelling unit* shall comply with ~~a) this Part, or b)~~ Subsection 9.32.3.	New Sentence (3) added.

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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. **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*.	~~**6.3.1.3. 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 40 m^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.~~ ~~**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*.~~	Article deleted.
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, 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).)	~~**6.3.1.4.**~~ **6.3.1.3. 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~~, 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.~~ 3.3.1.21.). (See Note A-6.3.1.3.(1).) (See also Sentence 3.3.5.4.(4).) ~~(See Note A-6.3.1.4.(1).)~~	
6.3.1.6. Indoor Air Contaminants (See Note A-6.3.1.6.) **4)** Air contaminants in spaces where workers will be present shall not exceed the occupational exposure limits set out in the Occupational Health and Safety Act and its Regulations.	**~~6.3.1.6.~~ 6.3.1.5. Indoor Air Contaminants** (See Note ~~A-6.3.1.6.~~ A-6.3.1.5.) ~~**4)** Air contaminants in spaces where workers will be present shall not exceed the occupational exposure limits set out in the Occupational Health and Safety Act and its Regulations.~~	Sentence (4) deleted.
6.3.1.7. Commercial Cooking Equipment **2)** 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. **3)** 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*. **4)** Canopies, hoods and ductwork for a ventilation system exposed within the kitchen or cooking area of a *food establishment* shall be constructed of stainless steel. **5)** 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*.	**~~6.3.1.7.~~ 6.3.1.6. Commercial Cooking Equipment** ~~**2)** 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.~~ ~~**3)** 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*.~~ ~~**4)** Canopies, hoods and ductwork for a ventilation system exposed within the kitchen or cooking area of a *food establishment* shall be constructed of stainless steel.~~ ~~**5)** 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*.~~	Sentences (2) to (5) deleted.
6.3.2.2. Drain Pans	**6.3.2.2. Drain Pans** (See Note A-6.3.2.2.)	New Sentence (2) added.

<table>
<tr><th>PART 6 – CODE UPDATE INFORMATION
NBC(AE) 2019</th><th>NBC(AE) 2023</th><th>Comments</th></tr>
<tr><td>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.</td><td>1) ~~Dehumidifying cooling coil assemblies and~~ HVAC systems that generate condensate ~~producing heat exchangers~~ or introduce liquid water into the airstream in the ducts shall be equipped with drain pans ~~beneath them~~ that are
a) designed in accordance with Section ~~5.11~~ 5.10, 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~~ safely disposed of, ~~and~~
c) installed so that water does not stagnate and drains ~~freely~~ from the pan, and
d) designed and installed so as to be accessible for cleaning and maintenance.

2) Drain pans and associated piping shall be constructed of corrosion-resistant, non-porous materials that do not promote the proliferation of disease-causing micro-organisms.</td><td></td></tr>
<tr><td>Table 6.3.2.9.
Minimum Distances of Air Intakes from Sources of Contaminants
Forming Part of Sentence 6.3.2.9.(2)

<table><tr><th>Source of Contaminants</th><th>Minimum Distance of Outdoor Air Intake, m</th></tr><tr><td>Discharge from evaporative cooling tower, evaporative fluid cooler and evaporative condenser</td><td>7.6</td></tr></table></td><td>Table 6.3.2.9.
Minimum Distances of Air Intakes from Sources of Contaminants
Forming Part of Sentence 6.3.2.9.(2)

<table><tr><th>Source of Contaminants</th><th>Minimum Distance of Outdoor Air Intake, m</th></tr><tr><td>Discharge from evaporative ~~cooling tower, evaporative fluid cooler and evaporative condenser~~ heat rejection systems</td><td>7.6</td></tr></table></td><td></td></tr>
<tr><td>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
…</td><td>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~~,
…</td><td></td></tr>
<tr><td>6.3.2.15. Evaporative Cooling Towers, Evaporative Fluid Coolers and Evaporative Condensers</td><td>6.3.2.15. Evaporative ~~Towers, Evaporative Fluid Coolers and Evaporative Condensers~~ Heat Rejection Systems

1) Evaporative heat rejection systems shall
a) incorporate a drift eliminator or other means to minimize the dispersion of entrained water droplets, and
b) have a design discharge velocity that does not exceed the maximum discharge velocity recommended by the manufacturer.

2) Evaporative heat rejection systems shall be designed so that water continuously circulates through all parts of the system that are normally wetted when the system is operating.

3) Evaporative heat rejection systems and their components shall be constructed of corrosion-resistant, non-porous materials that do not promote the proliferation of disease-causing micro-organisms and that are compatible with disinfectants, biocides and other cleaning agents.

4) Evaporative heat rejection systems shall be installed such that
a) no discharge air bypasses the drift eliminator or other means referred to in Clause (1)(a), and
b) the systems are accessible for cleaning, inspection and maintenance.

5) Except as provided in Sentence (6), air discharged from evaporative heat rejection systems shall discharge away from the building, so as to not re-enter it, to a distance not less than
a) 2.15 m above sidewalks and driveways,
b) 7.6 m from outdoor air intakes shall comply,</td><td>New Sentences (1) to (5) added.</td></tr>
</table>

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	c) 3 m horizontally or vertically from exterior doors and operable windows, and d) 3 m horizontally or vertically from occupiable outdoor spaces, excluding maintenance spaces. (See Note A-6.3.2.15.(5) and (6).)	
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."	~~1~~**6)** Air Discharge from evaporative ~~cooling towers to ventilation air intakes~~ heat rejection systems in health care facilitie shall ~~comply~~ discharge away from the *building* in compliance with ~~a) Sentence 6.3.2.9.(2), and b)~~ CAN/CSA-Z317.2, "Special ~~R~~requirements for ~~H~~heating, ~~V~~ventilation, and ~~A~~air-~~C~~conditioning (HVAC) ~~S~~systems in ~~H~~health ~~C~~care ~~F~~facilities." (See Note A-6.3.2.15.(5) and (6).)	
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.	~~2~~**7)** ~~The distance between the~~ Air intakes of evaporative ~~cooling towers, evaporative fluid coolers and evaporative condensers in relation to kitchen exhaust outlets,~~ heat rejection systems shall incorporate protective measures to minimize the entrainment of vegetation ~~or~~ and 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.	~~3~~**8)** 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~~ the Plumbing Code Regulation made pursuant to the Safety Codes Act. (See Note A-6.3.2.15.(8) and (9).)	
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."	~~4~~**9)** Water treatment systems and equipment for ~~biological growth control~~ controlling the proliferation of disease-causing micro-organisms shall a) be provided in accordance with ~~Sub-~~Section 7.6.2. of ASHRAE Guideline 12, "Minimizing the Risk of Legionellosis Associated with Building Water Systems~~.~~," and b) include means for drainage, dilution, cleaning, and application of chemicals for the control of scale, corrosion and biological contamination. (See Note A-6.3.2.15.(8) and (9).)	
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.	~~5~~**10)** 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~~ the Plumbing Code Regulation made pursuant to the Safety Codes Act.	
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.	~~6~~**11)** Evaporative ~~cooling towers, evaporative fluid coolers and evaporative condensers~~ heat rejection systems shall be provided with access ~~ports~~ openings, service platforms, fixed ladders and fall-restraint connections to allow ~~visual~~ inspection, maintenance and testing.	
6.3.2.16. Evaporative Air Coolers, Misters, Atomizers, Air Washers and Humidifiers **3)** Evaporative 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."	**6.3.2.16. Evaporative Air Coolers, Misters, Atomizers, Air Washers and Humidifiers** ~~3~~**1)** Evaporative 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." **2)** Systems referred to in Sentence (1) shall a) be designed so that water continuously circulates through all parts of the system that are normally wetted when the system is operating, and b) incorporate a method of preventing water stagnation within the system itself and the internal plumbing when the system is not operating. (See Note A-6.3.2.16.(2).)	Sentence (3) renumbered to (1) New Sentence (2) added. Sentence (1) renumbered to (3) with revisions. Sentence (2) renumbered to (4) with revisions. New sentences (5) and (6).
1) The filter and water evaporation medium of every air washer and evaporative air cooler enclosed within a *building* shall be made of *noncombustible* material. **2)** Sumps for air washers and evaporative air coolers shall be constructed and installed so that they can be flushed and drained.	~~1~~**3)** All components of systems referred to in Sentence (1), including ~~The~~ filters and ~~water~~ evaporation ~~medium of every air washer and evaporative air cooler enclosed within a *building*~~ media, shall be ~~made~~ constructed of ~~*noncombustible*~~ corrosion-resistant, non-porous materials that do not promote the proliferation of disease-causing micro-organisms. ~~2~~**4)** Associated sumps ~~for air washers and evaporative air coolers~~ shall a) be constructed of corrosion-resistant, non-porous materials that do not promote the proliferation of disease-causing micro-organisms, b) include auxiliary drains to prevent the overflow of water into ductwork, and	

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	c) be ~~constructed and~~ installed so that they can be flushed, ~~and~~ drained, cleaned and disinfected. **5)** Where misters, atomizers or air washers are used in ductwork, the affected duct section shall be a) designed to ensure drainage of unevaporated and accumulated water, and b) constructed of corrosion-resistant, non-porous materials that do not promote the proliferation of disease-causing micro-organisms. **6)** Make-up water connections shall be equipped with backflow prevention devices that conform to the Plumbing Code Regulation made pursuant to the Safety Codes Act. (See Note A-6.3.2.16.(6).)	
6.4.3.1. Lining or Backing **1)** A *noncombustible* lining or backing shall be provided for every steam or hot water radiator and convector a) located in a recess or concealed space, or b) attached to the face of a wall of *combustible construction*.	**6.4.3.1. Lining or Backing** **1)** A *noncombustible* lining or backing shall be provided for every steam or hot water radiator and convector a) located in a recess or concealed space, or b) attached to the face of a wall of *combustible construction* or *encapsulated mass timber construction.*	
6.5.1.1. Insulation and Coverings **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.	**6.5.1.1. Insulation and Coverings** **3)** Exposed piping or equipment subject to human contact shall be insulated so that the temperature of the exposed surface does not exceed ~~70~~ 52°C.	
6.9.1.2. Hazardous Gases, Dusts or Liquids **3)** Ventilation systems in storage rooms where *flammable liquids* or *combustible liquids* are stored in compliance with the NFC(AE) shall provide at least 5 L/s of exhaust air per square metre of room area, but not less than 70 L/s in total. **4)** Exhaust air from a ventilation system required in Sentence (3) shall be discharged outdoors and shall be taken from a point within 300 mm of the floor near a wall, with at least one makeup air inlet located near the opposite wall. **5)** Makeup air openings for a ventilation system described in Sentence (3) shall be a) protected in conformance with the requirements of Subsection 3.1.8., where the makeup air is taken from within the *building*, and b) remote from any discharge referred to in Sentence (4), where the makeup air is taken from outside the *building*. **6)** Ducts used to ventilate a *flammable liquids* or *combustible liquids* storage room described in Sentence (3) shall be used solely for that purpose. **7)** Industrial ovens in which flammable vapours may be present or through which products of combustion are circulated shall be ventilated in accordance with NFPA 86, “Ovens and Furnaces.”	**6.9.1.2. Hazardous Gases, Dusts or Liquids** ~~**3)** Ventilation systems in storage rooms where *flammable liquids* or *combustible liquids* are stored in compliance with the NFC(AE) shall provide at least 5 L/s of exhaust air per square metre of room area, but not less than 70 L/s in total.~~ ~~**4)** Exhaust air from a ventilation system required in Sentence (3) shall be discharged outdoors and shall be taken from a point within 300 mm of the floor near a wall, with at least one makeup air inlet located near the opposite wall.~~ ~~**5)** Makeup air openings for a ventilation system described in Sentence (3) shall be~~ ~~a) protected in conformance with the requirements of Subsection 3.1.8., where the makeup air is taken from within the *building*, and~~ ~~b) remote from any discharge referred to in Sentence (4), where the makeup air is taken from outside the *building*.~~ ~~**6)** Ducts used to ventilate a *flammable liquids* or *combustible liquids* storage room described in Sentence (3) shall be used solely for that purpose.~~ ~~**7)** Industrial ovens in which flammable vapours may be present or through which products of combustion are circulated shall be ventilated in accordance with NFPA 86, “Ovens and Furnaces.”~~	Sentences (3) to (7) deleted.