

Review of Nova Scotia Code Changes

Nova Scotia has introduced changes to the NBC and NPC. In reviewing these changes, I believe the following items may need attention or should be considered by the industry or manufacturers involved in heating and plumbing.

These are highlights of the major items and not comprehensive in anyway. The intent of this summary is to give a "head's up" notice of items that the industry should pay attention to because the rules of the game are changing.

This summary report highlights important changes and some have been extracted for ease of reference. If the detail is missing it can be found in the original document. [A copy can be obtained from Jason Bourque at CIPH.](#)

It should be noted that the Nova Scotia changes are additional to those in the NBC and NPC. This has the effect of having to meet additional objectives or new functional statements.

<p>1. 3.1.1.24. Division A NBC and NPC 2.2 Objectives add the following objective to Division A Sentence 2.2.1.1.(1) (See Appendix Note NSBCR A-3.1.1.24.)</p> <p>OR Resource Conservation An <i>objective</i> of this Code is to limit the probability that, as a result of the design or <i>construction</i> of a <i>building</i>, a natural resource will exposed to an unacceptable risk of depletion or the capacity of the infrastructure supporting the use of the resource will be exposed to an unacceptable risk of being exceeded.</p> <p>OR1 Water Conservation An <i>objective</i> of this Code is to limit the probability that, as a result of the design or <i>construction</i> of a <i>building</i>, water resources will be exposed to an unacceptable risk of depletion or the capacity of the water supply, treatment and disposal infrastructure will be exposed to an unacceptable risk of being exceeded, caused by the consumption of water.</p> <p>OR2 Energy Conservation An <i>objective</i> of this Code is to limit the probability that, as a result of the design or <i>construction</i> of a <i>building</i>, a natural resource will be exposed to an unacceptable risk of depletion or the capacity of the infrastructure supporting the use of the resource will be exposed to an unacceptable risk of being exceeded, caused by the consumption of energy.</p>
<p>2. NPC Article 2.4.9.1. No Reduction in Size is replaced as shown below:</p> <p>(1) Except as permitted in Sentence (3), no drainage pipe that is of minimum size required by this Part for the purpose for which it is installed shall be so connected as to drain to other drainage pipe of lesser size.</p> <p>(2) Where a <i>building drain</i> connects to a stack through a wall or floor, the drain shall retain its full size through the wall or floor.</p> <p>(3) A sanitary drainage pipe may be connected to a pre-engineered waste water heat recovery system that incorporates piping of a lesser size than required by Sentence (1) provided that it does not convey sewage, (a) from a <i>sanitary unit</i>, or (b) that contains solids.</p>

Review of Nova Scotia Code Changes

3. **Article 2.6.1.8. Solar Domestic Hot Water Systems** of the National Plumbing Code of Canada Division B is replaced with

2.6.1.8. Solar Domestic Hot Water Systems
(1) Except as provided in Sentence (2), a system for solar heating of *potable* water shall be installed in accordance with good engineering practice.
(2) Systems for solar heating of *potable* water in *residential occupancies* shall be installed in conformance with CAN/CSA-F383, "Installation Code for Solar Domestic Hot Water Systems".

4. **Article 2.6.4. Water Efficiency** is added In the National Plumbing Code of Canada Division B. This is totally new requirement.

2.6.4. Water Efficiency
2.6.4.1. Water Supply Fittings
(1) The flow rates of fittings that supply water to a fixture shall not exceed the maximum flow rates at the test pressures listed for that fitting in Table 2.6.4.1.
(2) Sentence (1) does not apply to a fixture located in a heritage *building*.

There is a new Table 2.6.4.1. as below:

**Table 2.6.4.1.
Maximum Flow Rates for Water Supply Fittings
Forming Part of Sentence 2.6.4.1.(1)**

Fitting	Maximum Flow, L/min	Test Pressure, kPa
Kitchen Faucet	8.35	413
Lavatory Faucet	8.35	413
Shower Heads	9.5	550
Column 1	Column 2	Column 3

Additionally, water closets have to comply with 6 lpf requirement and waterless urinals are acceptable in-lieu of regular urinals.

5. **Article 3.7.2.1. Plumbing and Drainage Systems** The National Building Code of Canada Division B Sentences 3.7.2.1.(1) and 3.7.2.2. (5) are revised as shown.

3.7.2.1. Plumbing and Drainage Systems
1) Except under clause 3.7.2.2.(5)(b), if the installation of a sanitary drainage system is not possible because of the absence of a water supply, sanitary privies, chemical closets or other means for the disposal of human waste shall be provided

3.7.2.2. (5)
(a) Urinals are permitted to be substituted for two thirds of the number of water closets required by this Article for males, except that if only 2 water closets are required for males, one urinal is permitted to be substituted for one of the water closets.
(b) Where urinals are permitted they may be of a type that utilizes water free technology and shall conform to CSA B 45 "Plumbing Fixtures Series."

Review of Nova Scotia Code Changes

6.	<p>10.3.1.2. Equipment Efficiency for Buildings of Residential Occupancy</p> <p>(1) The minimum annual fuel utilization efficiency of a <i>space-heating</i> and domestic hot-water appliances serving a <i>building</i> of residential occupancy shall conform to Table 10.3.1.2.</p> <p>Please refer to Table 10.3.1.2. The efficiencies vary from 85% for oil fired appliances and 90% for gas or propane.</p>
7.	<p>10.3.4.4. Heating, Ventilating and Air-Conditioning</p> <p>(1) A heating, ventilating and air-conditioning system that serves more than one heating, ventilating and air-conditioning zone shall conform to ANSI/ASHRAE/IESNA 90.1 "Energy Standard for <i>Buildings</i> Except Low-Rise Residential <i>Buildings</i>". (See Appendix Note Tables 10.3.4.4(1) to Table 10.3.4.4(7) NSBCR)</p> <p>(2) Sentences (3) to (11) and Article 10.3.4.5. apply to a heating, ventilating and air-conditioning system that serves a single heating, ventilating and air-conditioning zone.</p> <p>(3) The energy efficiency of equipment in a heating, ventilating and air-conditioning system that serves a single heating, ventilating and air-conditioning zone shall conform to</p> <p>(a) CAN/CSA-C656-05 Performance Standard for Split-System and Single Package Central Air Conditioners and Heat Pumps</p> <p>(b) CAN/CSA-C743-02 Performance Standard for Rating Packaged Water Chillers</p> <p>(c) ARI 310/380-2004 /CAN/CSA-C744-04 / Standard for Packaged Terminal Air Conditioners and Heat Pumps</p> <p>(d) CAN/CSA-C746-98 Performance Standard for Rating Large Air Conditioners and Heat Pumps</p> <p>(e) CAN/CSA-C13256-1-01 Water-Source Heat Pumps —Testing and Rating for Performance Part 1 Water-to-Air Heat and Brine-to-Air Heat Pumps (Adopted ISO 13256-1 1998, first edition, 1998-08-15, with Canadian deviations)</p> <p>(4) An air-conditioning system with a cooling capacity of 40 kW or more shall have an economizer,</p> <p>(a) controlled by appropriate high limit shut-off control, and</p> <p>(b) equipped with either barometric or powered relief sized to prevent excess pressurization of the <i>building</i>.</p> <p>(5) Outdoor air dampers for economizer use shall be provided with blade and jamb seals.</p> <p>(6) A heat recovery ventilator with a recovery effectiveness of 50% or more at the outside winter design temperature shall be provided where the quantity of the outdoor air supplied to the air duct distribution system is,</p> <p>(a) more than 1 400 L/s, and</p> <p>(b) more than 70% of the supply air quantity of the system.</p> <p>(7) Where a heat recovery ventilator is installed, the system shall have provisions to bypass or control the heat recovery ventilator to permit operation of the air economizer.</p> <p>(8) A heating, ventilating and air-conditioning system shall be controlled by a manual changeover or dual set point thermostat.</p> <p>(9) Except for a system requiring continuous operation, a heating, ventilating and air-conditioning system that has a cooling or heating capacity greater than 4.4 kW and a supply fan motor rated for more than 0.5 kW shall be provided with a time clock that,</p> <p>(a) is capable of starting and stopping the system under different schedules for seven different day-types per week,</p> <p>(b) is capable of retaining programming and time setting during a loss of power for a period of 10 hours or more,</p> <p>(c) includes an accessible manual override that allows temporary operation of the system for up to two hours,</p>

Review of Nova Scotia Code Changes

	<p>(d) is capable of temperature setback down to 13EC during off-hours, and (e) is capable of temperature setup to 32EC during off-hours.</p> <p>(10) Where separate heating and cooling equipment serves the same temperature zone, thermostats shall be interlocked to prevent simultaneous heating and cooling.</p> <p>(11) A heating, ventilating and air-conditioning system with a design supply air capacity greater than 5000 L/s shall have optimum start controls</p>
8.	<p>10.3.4.5. Ducts, Plenums and Piping Detailed requirements applying to the subject need conformance. For details see the full report available from j.bourque@ciph.com</p>
9.	<p>10.3.4.6. Service Water Heating (See Appendix Note A-Table 10.3.4.6.(1))</p> <p>(1) Water heating equipment, hot water supply boilers used solely for heating potable water and hot water storage tanks shall meet the minimum efficiency values in</p> <p>(a) CSA C745-03 Energy Efficiency of Electric Storage Tank Water Heaters and Heat Pump Water Heaters</p> <p>(b) CAN/CSA-P.3-2004 Testing Method for Measuring Energy Consumption and Determining Efficiencies of Gas-Fired Water Heaters</p> <p>(c) ANSI Z21.10.3-2004 / CSA 4.3-2004 Gas Water Heaters - Volume III, Storage Water Heaters With Input Ratings Above 75,000 Btu Per Hour, Circulating and Instantaneous</p> <p>(d) CAN/CSA-B211-00 Energy Efficiency of Oil-Fired Storage Tank Water Heaters</p> <p>(2) Domestic hot water heating piping shall be insulated in accordance with Table 10.3.4.5. if it is,</p> <p>(a) re-circulating system piping,</p> <p>(b) located within the first 2.5 m of outlet piping in a constant temperature non-re-circulating storage system,</p> <p>(c) an inlet pipe located between the storage tank and a heat trap in a non-re-circulating storage system, or</p> <p>(d) a pipe that is externally heated by methods such as a heat trace or impedance heating.</p> <p>(3) A hot water storage tank shall be provided with a temperature control to permit adjustment of the water storage temperature.</p> <p>(4) An automatic time switch or other control that can be set to switch off the usage temperature maintenance system during extended periods when hot water is not required shall be installed in a domestic hot water system that is designed to maintain usage temperatures in hot water pipes such as re-circulating hot water systems or heat trace.</p> <p>(5) If a re-circulating pump is used to maintain storage tank water temperature, the pump shall be equipped with a control to limit its operation to a period from the start of the heating cycle to a maximum of five minutes after the end of the heating cycle.</p> <p>(6) In a washroom located in a public facility, a device shall be provided to control the maximum temperature of water delivered from a lavatory faucets to not more than 43°C.</p> <p>(7) A vertical pipe riser that serves a storage water heater or a storage tank shall have heat traps on both the inlet and outlet piping as close as practical to the tank if,</p> <p>(a) the riser is in a non-re-circulating system, and</p> <p>(b) the storage water heater or the storage tank does not have integral heat traps.</p> <p>(8) A system that provides space heating and domestic water heating shall conform to Clause 10.2.1.1.(2)(a) or (b).</p>

F:\wpfiles\PIAC\Provincial Issues\Nova Scotia Code Changes\RBCreviewNScodeCHANGE2009oct15.doc