

11.7 Alterations for Building Energy and Emissions Performance

11.7.1 Energy Retrofit Design Building Classification

11.7.1.1. Application to Existing Buildings

- 1) Except as permitted by Sentence (2), *alterations* to a *building* shall be in conformance with this Subsection for the purposes of energy and emissions performance.
- 2) A structure that cannot be identified by the characteristics of a *building* in this Subsection shall comply with the requirements of Article 11.7.1.2., or as deemed *acceptable* to the *Chief Building Official*.
- 3) Except as permitted in Sentence (5) and Articles 11.7.1.2 through 11.7.1.5, *alterations* to a *building* shall comply with
 - a) alterations clauses within ANSI/ASHRAE/IES 90.1, “Energy Standard for Buildings Except Low-Rise Residential Buildings”, and Sentence 10.2.2.2.(2), or
 - b) the “Alteration Language Supporting NECB 2015” (See Note A-11.7.1.1.(3).).
- 4) Where a *building* contains one or more *major occupancies* that conform to Article 10.2.2.5., the remaining *major occupancies* shall comply with Clause (3)(a) or (b).
- 5) Spaces never previously occupied, shall be designed and constructed to new *building* requirements, in compliance with
 - a) Article 10.2.2.3, if the *building* was designed or upgraded to NECB, or
 - b) Article 10.2.2.2.,(See Note A-11.7.1.1.(5).)
- 6) The design requirements of Subsection 10.2.2. shall form an integral part of this Subsection, except where otherwise indicated.
- 7) Compliance with the requirements of this Subsection does not exempt upgrades that are otherwise required by this Part.

11.7.1.2. Buildings Without Residential or Commercial Components

- 1) Alterations to energy systems or components of a *building*, except those included in Articles 11.7.1.3 through 11.7.1.5, shall comply with
 - a) the *alteration* requirements of
 - i) Clause 11.7.1.1.(3)(a) except as required by Clause (ii), or
 - ii) Clause 11.7.1.1.(3)(b) where the building was designed or upgraded to NECB, and,
 - b) Articles 10.2.2.8 through 10.2.2.22. as applicable.

11.7.1.3. Residential Buildings of 4 Storeys or More, Commercial Buildings, and Mixed-Use Residential Buildings

- 1) Alterations to energy systems or components of a *building* containing Group C, D, or E *Major Occupancies*, except those included in Articles 11.7.1.4 through 11.7.1.5., shall comply with
 - a) the *alteration* requirements of Clause 11.7.1.1.(3)(b),
 - b) Articles 10.2.2.8 through 10.2.2.20. as applicable,
 - c) the airtightness performance requirements of Article 10.2.2.21. for reconstruction projects, and
 - d) Article 10.2.2.22. as applicable.

11.7.1.4. [UTV Deleted]

11.7.1.5. Residential Buildings of 1 to 3 Storeys, and Houses (excluding Hotels/Motels)

1) Except as otherwise required by Sentence 11.7.1.1.(7), Table 11.2.1.4.(2) or in this Subsection, alterations to energy systems or components of a *building*, described in Sentence 10.2.1.5.(1), shall comply with

- a) the thermal performance requirements of Article 10.2.2.6, except as permitted by Sentence (2),
- b) the fenestration performance requirements of Article 10.2.2.7., except as permitted by Sentence (2),
- c) Articles 10.2.2.8 through 10.2.2.11. as applicable;
- d) domestic hot water requirements of Article 10.2.2.12. except the system may be gas-fired with a uniform energy factor of not less than 0.78 or a thermal efficiency of not less than 90%;
- e) space-heating appliance performance requirements of Articles 10.2.2.13. and 10.2.2.14, except a system may be gas-fired with an Annual Fuel Utilization Efficiency (AFUE) rating of not less than 92% as tested using CSA 2.6/ANSI Z83.8, "Gas unit heaters, gas packaged heaters, gas utility heaters and gas-fired duct furnaces"
- f) the domestic fireplace performance requirements of Sentences 10.2.2.15.(1) to (4) and Article 10.2.2.16.,
- g) the heat recovery ventilators of Article 10.2.2.17., except that non-reconstruction projects may provide continuous exhaust ventilation in accordance with Section 9.32.,
- h) Article 10.2.2.20. for all alterations, except Sentence (3) shall apply to reconstruction projects only;
- i) Article 10.2.2.21. except an airtightness performance of 3.5 ACH may be used for reconstruction projects, and
- j) Article 10.2.2.22. as applicable.

2) Where it is deemed prohibitive by the *Chief Building Official*, an alteration or upgrade to a building may

- a) achieve the applicable standard of performance in Table 11.7.1.5 or as otherwise permitted by the *Chief Building Official*, and
- b) trade-off the remaining emissions-reduction outcomes with other building systems or components, acceptable to the *Chief Building Official*.

Table 11.7.1.5. – Permitted minimum standards (with equivalent emissions reduction trade-offs selected and approved)	
10.2.2.6. Wall assemblies	Shall achieve a minimum nominal RSI of 2.5 m ² K/W in the affected assemblies with heat transfer, air leakage and condensation control per Section 9.25.
10.2.2.6. Roof assemblies	Shall achieve a minimum nominal RSI of 3.8 m ² K/W in the affected assemblies with heat transfer, air leakage and condensation control per Section 9.25.
10.2.2.7. Windows, Curtainwall, sliding or folding doors with glazing	Shall achieve a maximum nominal USI of 1.44 W/m ² K

11.7.1.6. [UTV Deleted]