

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 11.7.1.2 through 11.7.1.6, *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 11.7.1.6, 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 7 Storeys or More, and Commercial Buildings (with or without residential components)

- 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 11.7.1.6., 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. Residential Buildings of 4 to 6 Storeys, and Mixed-Use Residential Buildings of 1 to 6 Storeys

- 1) Except for *buildings* included in Articles 11.7.1.5 or 11.7.1.6, *alterations* to energy systems or components of a *building* described in Sentence 10.2.1.4.(1), shall comply with
 - a) the *alteration* requirements of
 - i) Clause 11.7.1.1.(3)(a) as well as the thermal performance requirements of Articles 10.2.2.6. and 10.2.2.7., and the heat recovery ventilator requirements of Article 10.2.2.17., unless the *building* was designed or upgraded to NECB, or
 - ii) Clause 11.7.1.1.(3)(b), as well as the thermal performance requirements of Articles 10.2.2.6. and 10.2.2.7., and the heat recovery ventilator requirements of Article 10.2.2.17.,
 - 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.

11.7.1.5. Residential Buildings of 1 to 3 Storeys

- 1) Except as otherwise required 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 where in a building envelope *alteration* increasing envelope thickness to achieve required RSI-value(s) is deemed prohibitive by the CBO, the *building* design may
 - i) achieve a minimum nominal RSI of 2.5 W/m²K in the affected assemblies with heat transfer, air leakage and condensation control per Section 9.25, and
 - ii) trade-off the remaining unachieved envelope performance with other building systems or components to achieve equivalent energy performance outcomes, acceptable to the CBO,
 - b) Articles 10.2.2.7. through 10.2.2.11. as applicable,
 - c) domestic hot water requirements of Article 10.2.2.12. except an energy factor value of greater than 0.62 may be used,
 - d) Articles 10.2.2.13. through 10.2.2.20. as applicable,
 - e) Article 10.2.2.21 except an airtightness performance of 5.0 ACH may be used for reconstruction projects, and
 - f) Article 10.2.2.22. as applicable.

11.7.1.6. Residential Buildings with Not More Than 2 Principal Dwelling Units

- 1) Except as otherwise required in this Subsection, *alterations* to energy systems or components of a *building*, described in Sentence 10.2.1.6.(1), shall comply with
 - a) the thermal performance requirements of Article 10.2.2.6., except where in a building envelope *alteration* increasing envelope thickness to achieve required RSI-value(s) is deemed prohibitive by the CBO, the *building* design may
 - i) achieve a minimum nominal RSI of 2.5 W/m²K in the affected assemblies with heat transfer, air leakage and condensation control per Section 9.25, and
 - ii) trade-off the remaining unachieved envelope performance with other building systems or components to achieve equivalent energy performance outcomes, acceptable to the CBO,
 - b) Articles 10.2.2.7. through 10.2.2.11 as applicable,
 - c) Article 10.2.2.12 except with an energy factor value greater than 0.62,
 - d) Articles 10.2.2.13 through 10.2.2.20. as applicable, and
 - e) the maximum tested air leakage rates per Article 10.2.2.21. for reconstruction projects only.