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

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)

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.