

CHAPTER R5 EXISTING BUILDINGS

SECTION ECC R501 GENERAL

R501.1 Scope. The provisions of this chapter shall control the alteration, repair, addition and change of occupancy of existing buildings and structures. This chapter shall not apply to alterations required to comply with new building provisions as determined by 28-101.4.5 of the New York City Administrative Code.

R501.1.1 General. Except as specified in this chapter, this code shall not be used to require the removal, *alteration* or abandonment of, nor prevent the continued use and maintenance of, an existing *building* or *building* system lawfully in existence at the time of adoption of this code. Unaltered portions of the *existing building* or *building* supply system shall not be required to comply with this code.

R501.2 Compliance. Additions, alterations, repairs or changes of occupancy to, or relocation of, an existing building, building system or portion thereof shall comply with Section R502, R503, R504 or R505, respectively, in this code, and the provisions for alterations, repairs, additions and changes of occupancy or relocation, respectively, in the *New York City Building Code*, *the New York City Fire Code*, *the New York City Fuel Gas Code*, *the New York City Mechanical Code*, *the New York City Plumbing Code*, *the Housing Maintenance Code* and *the New York City Electrical Code*. as applicable. Changes where unconditioned space is changed to conditioned space shall comply with Section R501.6.

R501.3 Maintenance. Buildings and structures, and parts thereof, shall be maintained in a safe and sanitary condition. Devices and systems that are required by this code shall be maintained in conformance to the code edition under which installed. The owner or the owner's authorized agent shall be responsible for the maintenance of buildings and structures. The requirements of this chapter shall not provide the basis for removal or abrogation of energy conservation, fire protection and safety systems and devices in existing structures.

R501.4 New and replacement materials. Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for repairs, provided that hazards to life, health or property are not created. Hazardous materials shall not be used where the code for new construction would not allow their use in buildings of similar occupancy, purpose and location.

R501.5 Historic buildings. The provisions of this chapter shall control the repair, alteration, restoration and relocation of structures, and change of occupancy for historic buildings.

Exception: Compliance with the provisions of this code shall not be required for features of *historic buildings* where a historic building report, prepared in accordance with Section R501.5.1, has been submitted and *approved* by the *building official*.

R501.5.1 Historic building report. Written *historic building* reports shall be signed by a *registered design professional* or a representative of the State Historic Preservation Office or the historic preservation authority having jurisdiction. Such report shall identify each feature that is a *character-defining feature* of the historic form, fabric, or function of such *historic building* or historic district and shall demonstrate that compliance with a specific provision or provisions of this code would threaten, degrade or destroy the historic form, fabric or function of the *building* or historic district.

R501.6 Change in space conditioning. Any unconditioned or low-energy space that is altered to become *conditioned space* shall be required to be brought into full compliance with Section R502.

Exception: Where the simulated performance option in Section R405 is used to comply with this section, the annual *energy cost* of the *proposed design* is permitted to be 110 percent of the annual *energy cost* otherwise allowed by Section R405.2.

SECTION ECC R502 ADDITIONS

R502.1 General. *Additions* to an *existing building*, building system or portion thereof shall conform to the provisions of this code as those provisions relate to new construction. *Additions* shall not create an unsafe or hazardous condition or overload *existing building* systems. Altered portions of the building filed in conjunction with an addition shall comply with section R503

R502.2 Prescriptive compliance. *Additions* shall comply with Sections R502.2.1 through R502.2.5.

R502.2.1 Building thermal envelope. New *building thermal envelope* assemblies that are part of the addition shall comply with Sections R402.1, R402.2, R402.4.1 through R402.4.5, and R402.5.

Exception:

1. Section R402.5.1.2 shall only require testing of the portion of the envelope that is part of the addition in accordance with the guarded test provisions of ANSI/RESNET/ICC 380.
2. For additions less than 10 percent of the existing building conditioned area, the commissioner may waive the requirements of section R402.5.1.2 by having a Registered Design Professional submit an analysis indicating that such test would not significantly impact the energy performance of the addition.

R502.2.2 Heating and cooling systems. New heating, cooling, ventilation systems and ductwork that are part of an addition shall comply with Section R403.

Exception: Where ductwork from an existing heating and cooling system is extended to an addition, Sections R403.3.7 and R403.3.8 shall not be required for those portions of the systems that have not been modified.

R502.2.3 Service hot water systems. New service hot water systems that are part of the *addition* shall comply with Section R403.5.

R502.2.4 Lighting. New lighting systems that are part of the *addition* shall comply with Section R404.1 through R404.3.1.

R502.2.5 Additional energy efficiency credit requirements for additions. *Additions* shall comply with sufficient measures from Table R408.2 to achieve not less than five credits. *Alterations* to the *existing building* that are not part of the *addition* but are permitted with an *addition* shall be permitted to be used to achieve this requirement.

Exceptions:

1. *Additions* that increase the *building's* total *conditioned floor area* by less than 25 percent.
2. *Additions* that do not include the addition or replacement of equipment covered in Section R403.5 or R403.7.
3. *Additions* that do not increase *conditioned space*.
4. Where the *addition* alone or the *existing building* and *addition* together comply with Section R405 or R406.

SECTION ECC R503 ALTERATIONS

R503.1 General. *Alterations* to any *building* or structure shall comply with the requirements of the code for new construction, with-out requiring the unaltered portions of the *existing building* or building system to comply with this code. *Alterations* shall be such that the *existing building* or structure is not less conforming to the provisions of this code than the *existing building* or structure was prior to the *alteration*.

Alterations shall not create an unsafe or hazardous condition or overload *existing building* systems. *Alterations* to *existing buildings* shall comply with Sections R503.1.1 through R503.1.5.

R503.1.1 Building thermal envelope. *Alterations* of *existing building thermal envelope* assemblies shall comply with this section. New *building thermal envelope* assemblies that are part of the *alteration* shall comply with Section R402. The *R-value* of insulation shall not be reduced, nor the *U-factor* of a *building thermal envelope* assembly increased as part of a *building thermal envelope alteration* except where the *building* after the alteration complies with Section R405 or R406.

Exception: The following types of work shall not be required to comply with the requirements of this chapter provided that the energy use of the building is not increased:

1. Storm windows installed over existing *fenestration*.
2. *Roof recover*.
3. Surface-applied window film installed on existing single pane *fenestration* assemblies to reduce solar heat gain provided that the code does not require the glazing or fenestration assembly to be replaced.
4. Glass only replacements in an existing sash and frame.
5. *Air barriers* shall not be required for *roof recover* and *roof replacement* where the *alterations* or renovations to the *building* do not include *alterations*, renovations or *repairs* to the remainder of the *building thermal envelope*.
6. Replacement of existing doors that separate *conditioned space* from the exterior shall not require the installation of a vestibule or revolving door, provided, however, that an existing vestibule that separates such *conditioned space* from the exterior shall not be removed.

R503.1.1.1 Fenestration alterations. Where new *fenestration* area is added to an *existing building*, the new *fenestration* shall comply with Section R402.4. Where some or all of an existing *fenestration* unit is replaced with a new *fenestration* product, including sash and glazing, the replacement *fenestration* unit shall meet the applicable requirements for *U-factor* and *solar heat gain coefficient* (SHGC) as specified in Table R402.1.3. Where more than one replacement *fenestration* unit is to be installed, an area-weighted average of the *U-factor*, SHGC or both of all replacement *fenestration* units shall be an alternative that can be used to show compliance.

R503.1.1.2 Roof, ceiling and attic alterations. Where replacement of ceiling finishes exposes cavities of the roof-ceiling construction, that is part of the *building thermal envelope*, the cavities shall be insulated to full depth with new or existing insulation that complies with Section R303.1.4. and having a minimum nominal value of R-3.5 per inch. Insulation shall comply with Section R402.1 for new cavities created and the following alterations.

1. An *alteration* to roof/ceiling construction other than *reroofing* where existing insulation located below the roof deck or an attic floor above *conditioned space* does not comply with Table R402.1.3.
2. *Roof replacements* or a roof *alteration* that includes removing and replacing the roof covering where the *roof assembly* includes insulation entirely above the roof deck.
3. Conversion of an unconditioned attic space into *conditioned space*.

R503.1.1.3 Above-grade wall alterations. *Above-grade wall alterations* shall comply with the following as applicable:

1. Where wall cavities are exposed, the exposed cavities shall be insulated to full depth with new or existing insulation that complies with Section R303.1.4 and having a minimum nominal value of R-3.5 per inch. New cavities created shall be insulated in accordance with Section R402.1. An interior vapor retarder shall be provided where required in accordance with chapter 14 of the *New York City Building Code*.
2. Where exterior wall coverings, recladding and fenestration are added or replaced for the full extent of any exterior facade of one or more elevations of the building, continuous insulation shall be provided where required in accordance with Section R402.1. Where specified, the continuous insulation requirement also shall comply with the requirements of chapter 14 of the *New York City Building Code* as applicable, and manufacturers' instructions.
3. Where new interior finishes or exterior wall coverings are applied to the full extent of any exterior wall assembly of mass construction, insulation shall be provided in accordance with Section R402.1.

R503.1.1.4 Floor alterations. Where cavities in a floor or floor overhang are exposed and the floor or floor overhang is part of the building thermal envelope, the cavities shall be insulated to full depth with new or existing insulation that complies with Section R303.1.4. and having a minimum nominal value of R-3.5 per inch. New cavities created in the floor or floor overhang shall comply with Section R402.1. Where an unconditioned below-grade space is changed to conditioned space, floors that are part of the building thermal envelope enclosing such space shall comply with Section R502.

R503.1.1.5 Below-grade wall alterations. Where an unconditioned below-grade space is changed to *conditioned space*, the *building thermal envelope* walls enclosing such space shall comply with Section R502. Where the below-grade space is *conditioned space* and where the *building thermal envelope* walls enclosing such space are altered, they shall be insulated in accordance with Section R402.1.

R503.1.1.6 Air barrier. Altered *building thermal envelope* assemblies shall be provided with an air barrier in accordance with Section R402.5. The air barrier shall be made continuous with an existing air barrier where present in adjacent assemblies provided access is unobstructed. Testing requirements of Section R402.5.1.2 shall not be required.

R503.1.2 Heating and cooling systems. New heating cooling, ventilation systems and *ductwork* that are part of the *alteration* shall comply with Section R403 and this section. *Alterations* to existing heating and cooling systems and *ductwork* shall comply with this section.

Exception: Where *ductwork* from an existing heating and cooling system is extended, Sections R403.3.7 and R403.3.8 shall not be required for those portions of the systems that have not been modified.

R503.1.2.1 Ductwork. HVAC *ductwork* newly installed as part of an *alteration* shall comply with Section R403.

Exception: Sections R403.3.7 and R403.3.8 shall not be required for those portions of the systems that have not been modified *ductwork* from an existing heating and cooling system is extended.

R503.1.2.2 System sizing. New heating and cooling equipment that is part of an *alteration* shall be sized in accordance with Section R403.7 based on the *existing building* features as modified by the *alteration*.

Exception: Where it has been demonstrated to the *building official* that compliance with this section would result in heating or cooling equipment that is incompatible with the remaining portions of the existing heating or cooling system.

R503.1.2.3 Duct system leakage. Where an *alteration* includes any of the following, *duct systems* shall be tested in accordance with Section R403.3.7 and shall have a total leakage less than or equal to 12.0 cubic feet per minute (339.9 L/min) per 100 square feet (9.29 m²) of *conditioned floor area*:

1. Twenty-five percent or more of the registers that are part of the *duct system* are relocated.
2. Twenty-five percent or more of the total length of all *ductwork* in the *duct system* is relocated.
3. The total length of all *ductwork* in the *duct system* is increased by 25 percent or more.

Exception: *Duct systems* located entirely inside a *conditioned space* in accordance with Section R403.3.4.

R503.1.2.4 Controls. New heating and cooling equipment that is part of the *alteration* shall comply with Sections R403.1 and R403.2.

R503.1.3 Service hot water systems. New service hot water systems that are part of the *alteration* shall comply with Section R403.5.

Exception: Existing buildings complying with this section are exempt if the section requires altering existing systems within the building.

R503.1.4 Lighting. New lighting systems that are part of the *alteration* shall comply with Section R404.1.

Exception: *Alterations* that replace less than 10 percent of the luminaires in a space, provided that such *alterations* do not increase the installed interior lighting power.

R503.1.5 Additional efficiency credit requirements for substantial improvements. *Substantial improvements* shall comply with sufficient measures from Table R408.2 to achieve not less than three credits.

Exceptions:

1. *Alterations* that are permitted with an *addition* complying with Section R502.2.5.
2. *Alterations* that comply with Section R405 or R406.
3. *Substantial improvements* that do not include the *addition* or replacement of equipment covered in either Section R403.5 or R403.7.

SECTION ECC R504 REPAIRS

R504.1 General. *Buildings*, structures and parts thereof shall be repaired in compliance with Section R501.3 and this section. Work on nondamaged components necessary for the required *repair* of damaged components shall be considered to be part of the *repair* and shall not be subject to the requirements for *alterations* in this chapter. Routine maintenance required by Section R501.3, ordinary *repairs* exempt from *permit*, and abatement of wear due to normal service conditions shall not be subject to the requirements for *repairs* in this section.

R504.2 Application. For the purposes of this code, the following shall be considered to be *repairs*:

1. Glass-only replacements in an existing sash and frame.
2. Roof *repairs*.
3. *Repairs* where only the bulb, ballast or both within the existing luminaires in a space are replaced provided that the replacement does not increase the installed interior lighting power.

SECTION ECC R505 CHANGE OF OCCUPANCY OR USE

R505.1 General. Any space that is converted to a *dwelling unit* or portion thereof from another use or occupancy shall comply with Section R502.

Exception: Where the *simulated building performance* option in Section R405 is used to comply with this section, the annual *energy cost* of the *proposed design* is permitted to be 110 percent of the annual *energy cost* allowed by Section R405.2.

R505.1.1 Unconditioned space. Any unconditioned or low-energy space that is altered to become a *conditioned space* shall comply with Section R501.6.