CHAPTER 5 [CE]
EXISTING BUILDINGS

SECTION C501
GENERAL

C501.1 Scope. The provisions of this chapter shall control the *alteration*, *repair*, *addition* and change of occupancy of existing buildings and structures.

C501.1.1 Existing buildings. 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.

C501.2 Compliance. *Additions*, *alterations*, *repairs* and changes of occupancy to, or relocation of, existing buildings and structures shall comply with Sections C502, C503, C504, and C505 of this code, and with the provisions for *alterations*, *repairs*, *additions* and changes of occupancy or relocation, respectively, in the *EPCOT Building Code*, *Florida Fire Prevention Code*, *EPCOT Fuel Gas Code*, *EPCOT Mechanical Code*, *EPCOT Plumbing Code* and NFPA 70. Changes where unconditioned space is changed to conditioned space shall comply with Section C502.

Exception: Additions, alterations, repairs or changes of occupancy complying with ANSI/ASHRAE/IESNA 90.1.

C501.3 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.

C501.4 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 hazards to life, health or property are not created. Hazardous materials shall not be used where the code for new construction would not permit use of these materials in buildings of similar occupancy, purpose and location.

C501.5 Historic buildings. No provisions of this code relating to the construction, *repair, alteration*, restoration and movement of structures, and *change of occupancy* shall be mandatory for *historic buildings* provided a report has been submitted to the *code official* and signed by a *registered design professional*, or a representative of the State Historic Preservation Office or the historic preservation authority having jurisdiction, demonstrating that compliance with that provision would threaten, degrade or destroy the historic form, fabric or function of the building.

C501.6 Building systems and components. Thermal efficiency standards are set for the following building systems and components where new products are installed or replaced in existing buildings, and for which a permit must be obtained. New products shall meet the minimum efficiencies allowed by this code for the following systems and components:

Heating, ventilating or air-conditioning systems;
Service water or pool heating systems;
Lighting systems; and
Replacement fenestration.

Exceptions:

1. Where part of a functional unit is repaired or replaced. For example, replacement of an entire HVAC system is not required because a new compressor or other part does not meet code when installed with an older system.
2. If the unit being replaced is itself a functional unit, such as a condenser, it does not constitute a repair. Outdoor and indoor units that are not designed to be operated together must meet the U.S. Department of Energy certification requirements contained in Section R303.1.2. Matched systems are required; this match may be verified by any one of the following means:
    a. AHRI data
    b. Accredited laboratory
    c. Manufacturer's letter
    d. Letter from registered P.E. State of Florida
3. Where existing components are utilized with a replacement system, such as air distribution system ducts or electrical wiring for lights, such components or controls need not meet code if meeting code would require that component's replacement.
4. Replacement equipment that would require extensive revisions to other systems, equipment or elements of a building where such replacement is a like-for-like replacement, such as through-the-wall condensing units and PTACs, chillers and cooling towers in confined spaces.

C501.6.1 Existing equipment efficiencies. Existing cooling and heating equipment in residential applications need not meet the minimum equipment efficiencies, including system sizing and duct sealing.

C501.7 Hotel or motel lighting control alternative. Where existing electrical systems in hotel or motel sleeping units and guest suites are being renovated, modified, replaced or repaired, such systems shall not be required to have a master control device. The system shall not be required to have light-

ing and switched receptacles controlled by a captive key system where the facility is upgraded to comply with one or more Additional Energy Efficiency Package Options as described in Section C406.

1. For the purposes of reduced lighting power density calculations, use the lighting density for guestrooms as specified in Table 405.3.2(2).
2. Where a project is required to comply with Section C406 for Additional Efficiency Package Options, Item 1 of this section may not be used to meet both the requirement to comply with Section C406 and the exceptions to Section C501.6.

SECTION C502
ADDITIONS

C502.1 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 without requiring the unaltered portion of the existing building or building system to comply with this code. *Additions* shall not create an unsafe or hazardous condition or overload existing building systems. An *addition* shall be deemed to comply with this code if the *addition* alone complies or if the existing building and *addition* comply with this code as a single building.

C502.2 Change in space conditioning. Any nonconditioned or low-energy space that is altered to become conditioned space shall be required to comply with Section C502.

Exceptions:

1. Where the component performance alternative in Section C402.1.5 is used to comply with this section, the proposed UA shall be not greater than 110 percent of the target UA.
2. Where the total building performance option in Section C407 is used to comply with this section, the annual energy cost of the proposed design shall be not greater than 110 percent of the annual energy cost otherwise permitted by Section C407.3.

C502.3 Compliance. *Additions* shall comply with Sections C502.3.1 through C502.3.6.2.

C502.3.1 Vertical fenestration area. *Additions* shall comply with the following:

1. Where an *addition* has new *vertical fenestration* area that results in a total building *fenestration* area less than or equal to that permitted by Section C402.4.1, the *addition* shall comply with Section C402.4.
2. Where an *addition* with *vertical fenestration* that results in a total building *fenestration* area greater than Section C402.4.1 or *additions* that exceed the fenestration area greater than that permitted by Section C402.4.1, the *fenestration* shall comply with Section C402.4.1.1 for the *addition* only.
3. Where an *addition* has *vertical fenestration* that results in a total building vertical glass area exceeding that permitted by Section C402.4.1.1, the *addition* shall comply with Section C407.

C502.3.2 Skylight area. *Skylights* shall comply as follows:

1. Where an *addition* has new *skylight* area that results in a total building *fenestration* area less than or equal to that permitted by Section C402.4.1, the *addition* shall comply with Section C402.4.
2. Where an *addition* has new *skylight* area that results in a total building *skylight* area greater than that permitted by Section C402.4.1 or where additions have *skylight* area greater than that permitted by Section C402.4.1, the *skylight* area shall comply with Section C402.4.1.2 for the *addition* only.
3. Where an *addition* has *skylight* area that results in a total building *skylight* area exceeding that permitted by Section C402.4.1.2, the *addition* shall comply with Section C407.

C502.3.3 Building mechanical systems. New mechanical systems and equipment that are part of the *addition* and serve the building heating, cooling and ventilation needs shall comply with Sections C403 and C408.

C502.3.4 Service water-heating systems. New service water-heating equipment, controls and service water heating piping shall comply with Section C404.

C502.3.5 Pools and inground permanently installed spas. New pools and inground permanently installed spas shall comply with Section C404.9.

C502.3.6 Lighting power and systems. New lighting systems that are installed as part of the addition shall comply with Sections C405 and C408.

C502.3.6.1 Interior lighting power. The total interior lighting power for the *addition* shall comply with Section C405.3.2 for the *addition* alone, or the existing building and the *addition* shall comply as a single building.

C502.3.6.2 Exterior lighting power. The total exterior lighting power for the *addition* shall comply with Section C405.5.1 for the *addition* alone, or the existing building and the *addition* shall comply as a single building.

SECTION C503
ALTERATIONS

C503.1 General. *Alterations* to any building or structure shall comply with the requirements of Section C503. *Alterations* shall be such that the existing building or structure is no less conforming to the provisions of this code than the existing building or structure was prior to the alteration. *Alterations* to an existing building, building system or portion thereof shall conform to the provisions of this code as those provisions relate to new construction without requiring the unaltered portions of the existing building or building system to comply with this code. *Alterations* shall not create an

unsafe or hazardous condition or overload existing building systems.

Exception: The following *alterations* need not comply with the requirements for new construction, provided the energy use of the building is not increased:

1. Storm windows installed over existing *fenestration*.
2. Surface-applied window film installed on existing single-pane *fenestration* assemblies reducing solar heat gain, provided the code does not require the glazing or *fenestration* to be replaced.
3. Existing ceiling, wall or floor cavities exposed during construction, provided that these cavities are filled with insulation.
4. Construction where the existing roof, wall or floor cavity is not exposed.
5. *Roof recover*.
6. *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 envelope.
7. *Alterations* that replace less than 50 percent of the luminaires in a space, provided that such *alterations* do not increase the installed interior lighting power.

C503.2 Building envelope. New building envelope assemblies that are part of the *alteration* shall comply with Sections C402.1 through C402.5.

C503.2.1 Roof replacement. *Roof replacements* shall comply with Table C402.1.3 or C402.1.4 where the existing roof assembly is part of the *building thermal envelope* and contains insulation entirely above the roof deck.

C503.2.2 Vertical fenestration. The addition of *vertical fenestration* that results in a total building *fenestration* area less than or equal to that specified in Section C402.4.1 shall comply with Section C402.4. The addition of *vertical fenestration* that results in a total building *fenestration* area greater than Section C402.4.1 shall comply with Section C402.4.1.1 for the space adjacent to the new fenestration only. *Alterations* that result in a total building vertical glass area exceeding that specified in Section C402.4.1.1 shall comply with Section C407.

C503.2.2.1 Replacement fenestration products. 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 SHGC in Table C402.4.

Exception: An area-weighted average of the *U*-factor of replacement fenestration products being installed in the building for each fenestration product category listed in Table C402.4 shall be permitted to satisfy the *U*-factor requirements for each fenestration product category listed in Table C402.4. Individual fenestration products from different product categories listed in Table C402.4 shall not be combined in calculating the area-weighted average *U*-factor.

C503.2.3 Skylight area. The addition of *skylight* area that results in a total building *skylight* area less than or equal to that specified in Section C402.4.1 shall comply with Section C402.4. The addition of *skylight* area that results in a total building skylight area greater than Section C402.4.1 shall comply with Section C402.4.1.2 for the space adjacent to the new skylights. *Alterations* that result in a total building skylight area exceeding that specified in Section C402.4.1.2 shall comply with Section C407.

C503.3 Heating and cooling systems. New heating, cooling and duct systems that are part of the *alteration* shall comply with Sections C403 and C408.

C503.3.1 Economizers. New cooling systems that are part of *alteration* shall comply with Section C403.3.

C503.4 Service hot water systems. New service hot water systems that are part of the *alteration* shall comply with Sections C404 and C408.

C503.5 Lighting systems. New lighting systems that are part of the *alteration* shall comply with Sections C405 and C408.

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.

SECTION C504
REPAIRS

C504.1 General. Buildings and structures, and parts thereof, shall be repaired in compliance with Section C501.3 and this section. Work on nondamaged components that is necessary for the required *repair* of damaged components shall be considered part of the *repair* and shall not be subject to the requirements for *alterations* in this chapter. Routine maintenance required by Section C501.3, 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.

Where a building was constructed to comply with ANSI/ASHRAE/IESNA 90.1, repairs shall comply with the standard and need not comply with Sections C402, C403, C404 and C405.

C504.2 Application. For the purposes of this code, the following shall be considered repairs:

1. Glass-only replacements in an existing sash and frame.
2. *Roof repairs*.
3. Air barriers shall not be required for *roof repair* where the repairs to the building do not include *alterations*, renovations or *repairs* to the remainder of the building envelope.
4. Replacement of existing doors that separate conditioned space from the exterior shall not require the installation of a vestibule or revolving door, provided that an existing vestibule that separates a conditioned space from the exterior shall not be removed.

5. *Repairs* where only the bulb, the 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 C505
CHANGE OF OCCUPANCY OR USE

C505.1 General. Spaces undergoing a change in occupancy that would result in an increase in demand for either fossil fuel or electrical energy shall comply with this code. Where the use in a space changes from one use in Table C405.3.2(1) or C405.3.2(2) to another use in Table C405.3.2(1) or C405.3.2(2), the installed lighting wattage shall comply with Section C405.3.

Exceptions:

1. Where the component performance alternative in Section C402.1.5 is used to comply with this section, the proposed UA shall be not greater than 110 percent of the target UA.
2. Where the total building performance option in Section C407 is used to comply with this section, the annual energy cost of the proposed design shall be not greater than 110 percent of the annual energy cost otherwise permitted by Section C407.3.

CHAPTER 6 [CE]

REFERENCED STANDARDS

This chapter lists the standards that are referenced in various sections of this document. The standards are listed herein by the promulgating agency of the standard, the standard identification, the effective date and title, and the section or sections of this document that reference the standard. The application of the referenced standards shall be as specified in Section 106.

AABC

Associated Air Balance Council
1518 K Street, Suite 503
Washington, DC 20005

Standard reference number	Title	Referenced in code section number
AABC, 1989	Associated Air Balance Council National Standards	C408.2.2.1

AAMA

American Architectural Manufacturers Association
1827 Walden Office Square
Suite 550
Schaumburg, IL 60173-4268

Standard reference number	Title	Referenced in code section number
AAMA/WDMA/CSA 101/I.S.2/A 440—11 or 17	North American Fenestration Standard/ Specification for Windows, Doors, and Skylights	Table C402.5.2

ACCA

Air Conditioning Contractors of America
2800 Shirlington Road, Suite 300
Arlington, VA 22206

Standard reference number	Title	Referenced in code section number
ACCA Manual D—1995	Residential Duct Systems	C403.2.9.5
ACCA Manual N—2005	Commercial Load Calculation	C403.2.1
ANSI/ASHRAE/ ACCA 183—RA2017	Peak Cooling and Heating Load Calculations in Buildings Except Low-rise Residential Buildings	C403.2.1

ADC

Air Duct Council
1901 N. Roselle Rd., Suite 800
Schaumburg, IL 60195

Standard reference number	Title	Referenced in code section number
ADC—2003	Flexible Duct Performance & Installation Standards, Fourth Edition	Table C403.2.9.2

AHAM

Association of Home Appliance Manufacturers
1111 19th Street, NW, Suite 402
Washington, DC 20036

Standard reference number	Title	Referenced in code section number
ANSI/ AHAM RAC-1—2015	Room Air Conditioners	Table C403.2.3(3)

AHRI

Air-Conditioning, Heating, & Refrigeration Institute
2111 Wilson Blvd, Suite 500
Arlington, VA 22201

Standard reference number	Title	Referenced in code section number
ISO/AHRI/ASHRAE 13256-1 (2011)	Water-to-Air and Brine-to-Air Heat Pumps— Testing and Rating for Performance	Table C403.2.3(2)
ISO/AHRI/ASHRAE 13256-2 (2011)	Water-to-Water and Brine-to-Water Heat Pumps — Testing and Rating for Performance	Table C403.2.3(2)
210/240—2017	Performance Rating of Unitary Air-Conditioning and Air-Source Heat Pump Equipment	Table C403.2.3(1), Table C403.2.3(2)
310/380—2017 (CSA C744-17)	Standard for Packaged Terminal Air Conditioners and Heat Pumps	Table C403.2.3(3)
340/360—2015	Performance Rating of Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment	Table C403.2.3(1), Table C403.2.3(2)
365(I-P)—09	Commercial and Industrial Unitary Air-Conditioning Condensing Units	Table C403.2.3(1), Table C403.2.3(6)
390—(I-P) 2003	Performance Rating of Single Package Vertical Air-Conditioners and Heat Pumps	Table C403.2.3(3)
400—(I-P) 2015	Performance Rating of Liquid to Liquid Heat Exchangers.	Table C403.2.3(10)
440—2008 with Addendum 1	Performance Rating of Room Fan Coils	C403.2.10
460—2005	Performance Rating of Remote Mechanical-Draft Air-Cooled Refrigerant Condensers.	Table C403.2.3(8)
550/590—(I-P) 2018	Performance Rating of Water-Chilling and Heat Pump Water-Heating Packages Using the Vapor Compression Cycle	C403.2.3.1, Table C403.2.3(7)
560—00	Absorption Water Chilling and Water Heating Packages.	Table C403.2.3(7)
1160 (I-P) —2014 with Addendum 1	Performance Rating of Heat Pump Pool Heaters	Table C404.2
1200—(I-P) 2013	Performance Rating of Commercial Refrigerated Display Merchandisers and Storage Cabinets	Table C403.2.14.1(1), C403.2.14.1
1230—2010	Performance Rating of Variable Refrigerant Flow (VRF) Multi-split Air-conditioning and Heat Pump Equipment with Addendum 1	Table C403.2.3(11), Table C403.2.3(12)
1250-(I-P)—2014	Standard for Performance Rating in Walk-in Coolers and Freezers.	C403.2.14.2(3)
1360—17	Performance Rating of Computer and Data Processing Room Air Conditioners	Table C403.2.3(9)

AMCA

Air Movement and Control Association International
30 West University Drive
Arlington Heights, IL 60004-1806

Standard reference number	Title	Referenced in code section number
AMCA 208—18 Annex C	Calculation of the Fan Energy Index	C202, C403.2.12.3, C403.2.12.6.1
ANSI/AMCA 230—15:	Laboratory Methods of Testing Air Circulating Fans for Rating and Certification	C403.2.12.6
220—2021	Laboratory Methods of Testing Air Curtain Units for Aerodynamic Performance Rating.	C402.5.7
500D—18	Laboratory Methods for Testing Dampers for Rating	C403.2.4.3