

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 C106.

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 C440—17	North American Fenestration Standard/Specifications for Windows, Doors and Unit Skylights	Table C402.4.1.1.2

AHAM Association of Home Appliance Manufacturers
 1111 19th Street, N.W., Suite 402
 Washington, D.C. 20036

Standard reference number	Title	Referenced in code section number
ANSI/AHAM RAC-1—2008	Room Air Conditioners	C403.3.2((3)) (4)
AHAM HRF-1—2017	Energy, Performance and Capacity of Household Refrigerators, Refrigerator-Freezers and Freezers	Table C410.1(1)

AHRI Air Conditioning, Heating, and Refrigeration Institute
 4100 North Fairfax Drive, Suite 200
 Arlington, VA 22203

Standard reference number	Title	Referenced in code section number
ISO/AHRI/ASHRAE 5801—2017	Fans—Performance Testing Using Standardized Airways	C403.8.1.1
ISO/AHRI/ASHRAE 13256-1 (2017)	Water-source Heat Pumps—Testing and Rating for Performance—Part 1: Water-to-air and Brine-to-air Heat Pumps	Table C403.3.2(14)
ISO/AHRI/ASHRAE 13256-2 (2017)	Water-source Heat Pumps—Testing and Rating for Performance—Part 2: Water-to-water and Brine-to-water Heat Pumps	Table C403.3.2(14)
210/240—(2017 and 2023)	Performance Rating of Unitary Air Conditioning and Air-source Heat Pump Equipment	Table C403.3.2(1), Table C403.3.2(2)
310/380—2017	Standard for Packaged Terminal Air Conditioners and Heat Pumps	Table C403.3.2(4)
340/360—2018	Commercial and Industrial Unitary Air-conditioning and Heat Pump Equipment	Table C403.3.2(1), Table C403.3.2(2)

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AHRI—continued

365—2009	Commercial and Industrial Unitary Air-conditioning Condensing Units	Table C403.3.2(1)
390—2015	Performance Rating of Single Package Vertical Air Conditioners and Heat Pumps.	Table C403.3.2(4)
400—2015	Liquid to Liquid Heat Exchangers with Addendum 2.	C403.3.2
430—2020	Performance Rating of Central Station Air-Handling Unit Supply Fans	C403.8.1.1
440—19	Room Fan Coil.	C403.8.1.1, C403.10.3
460—05	Performance Rating Remote Mechanical Draft Air-cooled Refrigerant Condensers	Table C403.3.2 (7)
550/590—2018	Water Chilling Packages Using the Vapor Compression Cycle—with Addenda	C403.3.2.3, Table C403.3.2(3), Table C403.3.2(15)
560—2018	Absorption Water Chilling and Water-heating Packages	Table C403.3.2(3)
910—2014	Performance Rating of Indoor Pool Dehumidifiers.	Table C403.3.2(11)
920—2015	Performance Rating of DX-Dedicated Outdoor Air System Units	C202, Table C403.3.2(12), Table C403.3.2 (13)
1160—2014	Performance Rating of Heat Pump Pool Heaters.	Table C404.2, C404.11.1
1200—2013	Performance Rating of Commercial Refrigerated Display Merchandisers and Storage Cabinets	C410.1, Table C410.1(1), Table C410.1(2)
1230—2014	Performance Rating of Variable Refrigerant Flow (VRF) Multi-Split Air-Conditioning and Heat Pump Equipment (with Addendum 1).	Table C403.3.2(9)
1250—2014	Standard for Performance Rating in Walk-in Coolers and Freezers	Table C410.2.1(3)

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
205—12	Energy Efficiency Classification for Fans	C403.8.3
208—2018	Calculation of the Fan Energy Index	C403.8.1.1, C403.8.3
210—2016	Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating	C403.8.1.1
220—19	Laboratory Methods for Testing Air Curtain Units for Aerodynamic Performance Rating	C402.5.7
230—15	Laboratory Methods of Testing Air Circulating Fans for Rating and Certification	C403.9
500D—18	Laboratory Methods for Testing Dampers for Rating	C402.4.5.1, C402.4.5.2

ANSI

American National Standards Institute
25 West 43rd Street
Fourth Floor
New York, NY 10036

Standard reference number	Title	Referenced in code section number
ANSI/AMCA 208-2018	Calculation of the Fan Energy Index	C403.8.1.1
ANSI/AMCA 210-16/ASHRAE 51-16	Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating	C403.8.1.1

ANSI—continued

ANSI/ASME A17.1—2010	Safety code for elevators and escalators	C405.12.1
ANSI/CTA 2045-A—2018	Modular Communications Interface for Energy Management	C404.14
ANSI/CTA 2045-B—2021	Modular Communications Interface for Energy Management	C404.14
Z21.10.3/CSA 4.3— ((H)) 17	Gas Water Heaters, Volume III—Storage Water Heaters with Input Ratings Above 75,000 Btu per Hour, Circulating Tank and Instantaneous.	Table C404.2
Z21.47/CSA 2.3 16	Gas-fired Central Furnaces	Table C403.3.2(5)
Z83.8/CSA 2.6—16	Gas Unit Heaters, Gas Packaged Heaters, Gas Utility Heaters and Gas-fired Duct Furnaces	Table C403.3.2(5)

APSP

The Association of Pool and Spa Professionals
2111 Eisenhower Avenue
Alexandria, VA 22314

Standard reference number	Title	Referenced in code section number
14— 2019	American National Standards for Portable Electric Spa Efficiency	C404.12

ASABE

American Society of Agricultural and Biological Engineers
2950 Niles Road
St. Joseph, MI 49085

Standard reference number	Title	Referenced in code section number
S640—2017	Quantities and Units of Electromagnetic Radiation for Plants (Photosynthetic Organisms)	C405.3

ASHRAE

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
1791 Tullie Circle, N.E.
Atlanta, GA 30329-2305

Standard reference number	Title	Referenced in code section number
ANSI/ASHRAE/ACCA Standard 127-2007	Method of Testing for Rating Computer and Data Processing Room Unitary Air Conditioners.	((Table C403.3.2(9))) C403.5
ANSI/ASHRAE/ACCA Standard 183—((2007)) RA2017	Peak Cooling and Heating Load Calculations in Buildings, Except Low-rise Residential Buildings	((Table C403.3.2(9))) C403.5 C403.1.2
ASHRAE—((2016)) 2020 ISO/AHRI/ASHRAE 13256-1 ((2014)) 2012	ASHRAE HVAC Systems and Equipment Handbook—((2016)) 2020 Water-source Heat Pumps—Testing and Rating for Performance—Part 1: Water-to-air and Brine-to-air Heat Pumps	C403.1.2 Table C403.3.2((2)) (14)
ISO/AHRI/ASHRAE 13256-2 ((2014)) 2012	Water-source Heat Pumps—Testing and Rating for Performance—Part 2: Water-to-water and Brine-to-water Heat Pumps.	Table C403.3.2((2)) (14)

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ASHRAE—continued

90.1— (2016) <u>2022</u>	Energy Standard for Buildings Except Low-rise Residential Buildings (ANSI/ASHRAE/IESNA 90.1— (2010) <u>2022</u>	Table C402.1.3, Table C402.1.4, C406.2
90.4— (2019) <u>2022</u> 146—2011	Energy Standard for Data Centers (with Addenda a, b, d, e) Testing and Rating Pool Heaters	C403.1.3 Table C404.2

ASME

American Society of Mechanical Engineers
Two Park Avenue
New York, NY 10016-5990

Standard reference number	Title	Referenced in code section number
ASME A17.1/CSA B44— (2016) 2019	Safety Code for Elevators and Escalators	C405.9.2
BPVC Section IV-2021	Boiler and Pressure Vessel Code, Section IV—Rules for Construction of Heating Boilers	C404.14
BPVC Section X-2021	Boiler and Pressure Vessel Code, Section X—Fiber-Reinforced Plastic Pressure Vessels	C404.14

ASTM

ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428-2859

Standard reference number	Title	Referenced in code section number
C 90— (14) <u>206A</u>	Specification for Load-bearing Concrete Masonry Units	Table C402.1.3
C518—17	Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus	Table C403.10.1.1
C1363—11	Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus	C303.1.4.1, Table C402.1.4
C1363—11	Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus	C303.1.4.1, Table C402.1.4, C402.2.7
C 1371—15	Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers	Table C402.4
C 1549—09	Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using A Portable Solar Reflectometer	Table C402.4
D 1003—13	Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics	C402.4.2.2
E 283—04 (2012)	Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen	C402.5.8
E 408—13	Test Methods for Total Normal Emittance of Surfaces Using Inspection-meter Techniques	Table (C402.4) <u>C402.3</u>
E 779— (40) <u>2018</u>	Standard Test Method for Determining Air Leakage Rate by Fan Pressurization	C402.5.1.2.3
E 903—12	Standard Test Method Solar Absorptance, Reflectance and Transmittance of Materials Using Integrating Spheres (Withdrawn 2005)	Table C402.4
E 1677—11	Standard Specification for an Air-retarder (AR) Material or System for Low-rise Framed Building Walls.	C402.5.1.2.2
E 1827—2011(2017)	Standard Test Methods for Determining Airtightness of Building Using an Orifice Blower Door	C402.5.2, C402.5.3

ASTM—continued

E 1918—06 (2015)	Standard Test Method for Measuring Solar Reflectance of Horizontal or Low-sloped Surfaces in the Field	Table C402.4
E 1980—11	Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-sloped Opaque Surfaces	Table C402.2.1.1
E 2178—13	Standard Test Method for Air Permanence of Building Materials	C402.4
E 2357—11	Standard Test Method for Determining Air Leakage of Air Barrier Assemblies	C402.5.1.2.2
F 1281—2017	Specification for Cross-linked Polyethylene/Aluminum/Cross-linked Polyethylene (PEX-AL_PEX) Pressure Pipe	Table C404.5.2.1

CSA Canadian Standards Association
5060 Spectrum Way
Mississauga, Ontario, Canada L4W 5N6

Standard reference number	Title	Referenced in code section number
AAMA/WDMA/CSA 101/I.S.2/A440—11	North American Fenestration Standard/Specification for Windows, Doors and Unit Skylights	Table C402.4.2
CSA B55.1—2015	Test Method for Measuring Efficiency and Pressure Loss of DWHR Units	C404.10
CSA B55.2—2015	Drain Water Heat Recovery Units	C404.10

CSA CSA Group
8501 East Pleasant Valley Road
Cleveland OH 44131-5516

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>CAN/CSA-C439-18</u>	<u>Laboratory methods of test for rating the performance of heat/energy-recovery ventilators</u>	<u>Table C403.8.4</u>

CTA Consumer Technology Association
1919 S Eads Street
Arlington, VA 22202

Standard reference number	Title	Referenced in code section number
ANSI/CTA 2045-A—2018	Modular Communications Interface for Energy Management	C404.14
ANSI/CTA 2045-B—2021	Modular Communications Interface for Energy Management	C404.14

CTI Cooling Technology Institute
2611 FM 1960 West, Suite A-101
Houston, TX 77068

Standard reference number	Title	Referenced in code section number
ATC 105 ((000)) —2019	Acceptance Test Code for Water Cooling Tower	Table C403.3.2 ((8)) (7)
ATC 105DS—2018	Acceptance Test Code for Dry Fluid Coolers	Table C403.3.2(7)
ATC 105S—11	Acceptance Test Code for Closed Circuit Cooling Towers	Table C403.3.2 ((8)) (7)

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CTI—continued

ATC 106—11	Acceptance Test Code for Mechanical Draft Evaporative Vapor Condensers	Table C403.3.2((8)) (7)
STD 201—((14)) 17	Standard for Certification of Water Cooling Towers Thermal Performances.	Table C403.3.2((8)) (7)

DASMA Door and Access Systems Manufacturers Association
 1300 Sumner Avenue
 Cleveland, OH 44115-2851

Standard reference number	Title	Referenced in code section number
105—((92 (R2004) 17)) 17	Test Method for Thermal Transmittance and Air Infiltration of Garage Doors	Table C402.4.2

DOE U.S. Department of Energy
 c/o Superintendent of Documents
 U.S. Government Printing Office
 Washington, D.C. 20402-9325

Standard reference number	Title	Referenced in code section number
10 C.F.R., Part 430—2015	Energy Conservation Program for Consumer Products: Test Procedures and Certification and Enforcement Requirement for Plumbing Products; and Certification and Enforcement Requirements for Residential Appliances; Final Rule	Table C403.3.2((4)) (1), Table C403.3.2((5)) (2), Table C403.3.2(5), Table C403.3.2(6), Table C403.3.2(14), Table C404.2
((10 C.F.R., Part 430, Subpart B, Appendix N— 2015)	Uniform Test Method for Measuring the Energy Consumption of Furnaces and Boilers.	C202)
10 C.F.R., Part 431— 2015	Energy Efficiency Program for Certain Commercial and Industrial Equipment: Test Procedures and Efficiency Standards; Final Rules	Table C403.3.2((5)) (6), C403.8.4, C403.11, Table ((C406.2(5))) C403.11, C403.11.2, C405.7, Table C405.7, C405.8, Table C405.8(1), Table C405.8(2), Table C405.8(3)
((NAECA 87—(88))	National Appliance Energy Conservation Act 1987 [(Public Law 100-12 (with Amendments of 1988 P.L. 100-357)]	Tables C403.3.2(1), (2), (4))

HVI

Home Ventilating Institute
1740 Dell Range Blvd., Ste. H, PMB 450
Cheyenne, WY 82009

Standard reference number	Title	Referenced in code section number
920—2020	Product Performance Certification Procedure Including Verification and Challenge	C403.3.5.1, C403.3.6

IAPMO

International Association of Plumbing and Mechanical Officials
4755 E. Philadelphia Street
Ontario, CA 91761

Standard reference number	Title	Referenced in code section number
UPC—(2015) <u>2021</u>	Uniform Plumbing Code	C201.3, (C501.4) <u>C501.2</u>

ICC

International Code Council, Inc.
500 New Jersey Avenue, N.W.,
6th Floor
Washington, D.C. 20001

Standard reference number	Title	Referenced in code section number
IBC—(15) <u>21</u>	International Building Code	C201.3, C303.2, C402.4.3, C501.2
ICC 500—2020	Standard for the Design and Construction of Storm Shelters	C402.4.2
IFC—(15) <u>21</u>	International Fire Code	C201.3, (C501.4) <u>C501.2</u>
IFGC—(15) <u>21</u>	International Fuel Gas Code	C201.3, (C501.4) <u>C501.2</u>
IMC—(15) <u>21</u>	International Mechanical Code	C106.3, C201.3, C402.5.3, C403.2.2.1, C403.2.2.2, C403.3.5, C403.3.5.1, C403.6.1, C403.6.5, C403.6.10, C403.7.1, C403.7.2, C403.7.5, C403.7.5.1, C403.7.6, C403.7.7.3, C403.7.8.1, C403.7.8.4, C403.8.4, C403.8.5.1, Table C403.10.1, C403.10.1.2, Table C403.10.1.2, C403.10.2.2, C403.12, C406.6, C408.2.2.1, (C501.4) <u>C501.2</u>

GENERAL REQUIREMENTS

IEEE

The Institute of Electrical and Electronic Engineers, Inc.
3 Park Avenue
New York, NY 10016

Standard reference number	Title	Referenced in code section number
IEEE 515.1—2012	IEEE Standard for the Testing, Design, Installation and Maintenance of Electrical Resistance Trace Heating for Commercial Applications	C404.6.2

~~(IESNA)~~ IES

illuminating Engineering Society (~~of North America~~)
120 Wall Street, 17th Floor
New York, NY 10005-4001

Standard reference number	Title	Referenced in code section number
ANSI/ASHRAE/IESNA 90.1— (2016) 2019	Energy Standard for Buildings Except Low-rise Residential Buildings	Table C402.1.3, Table C402.1.4, Table C407.5.1

ISO

International Organization for Standardization
1, rue de Varembe, Case postale 56, CH-1211
Geneva, Switzerland

Standard reference number	Title	Referenced in code section number
ISO/AHRI/ASHRAE 13256-1 (2017)	Water-Source Heat Pumps—Testing and Rating for Performance—Part 1: Water-to-air and Brine-to-air Heat Pumps	C403.3.2((2)) (14)
ISO/AHRI/ASHRAE 13256-2 (2017)	Water-Source Heat Pumps—Testing and Rating for Performance—Part 2: Water-to-water and Brine-to-water Heat Pumps	C403.3.2((2)) (14)
25745-2:2015	Energy Performance of Lifts, Escalators and Moving Walks—Part 2: Energy Calculation and Classification for Lifts (Elevators)	C406.2.14

NEEA

Northwest Energy Efficiency Alliance
421 SW 6th Ave.
Suite 600
Portland, OR 97204

Standard reference number	Title	Referenced in code section number
AWS Vers. 8.0—2022	Advanced Water Heating Specification	C404.2.1

NEMA

National Electric Manufacturers Association
 1300 North 17th Street
 Suite 1752
 Rosslyn, VA 22209

Standard reference number	Title	Referenced in code section number
((TP-1-2002	Guide for Determining Energy Efficiency for Distribution Transformers	C405.9))
ANSI/NEMA WD 6-2016	Wiring Devices—Dimensional Specifications	C405.12
MGI—((2014)) <u>2016</u>	Motors and Generators	C202
TP-1-2002	Guide for Determining Energy Efficiency for Distribution Transformers	C405.9

NFRC

National Fenestration Rating Council, Inc.
 6305 Ivy Lane, Suite 140
 Greenbelt, MD 20770

Standard reference number	Title	Referenced in code section number
100—((2017)) <u>2020</u>	Procedure for Determining Fenestration Product U-factors	C303.1.2, C402.2.2
200—((2017)) <u>2020</u>	Procedure for Determining Fenestration Product Solar Heat Gain Coefficients and Visible Transmittance at Normal Incidence	C303.1.3, C402.4.1.1
202—2017	Procedure for Determining Fenestration Product Visible Transmittance at Normal Incidence	C202
NFRC 203—2017	Procedure for Determining Visible Transmittance of Tubular Daylighting Devices	C202, C402.4.2
400—2017	Procedure for Determining Fenestration Product Air Leakage.	Table C402.4.2

SMACNA

Sheet Metal and Air Conditioning Contractors National Association, Inc.
 4021 Lafayette Center Drive
 Chantilly, VA 20151-1209

Standard reference number	Title	Referenced in code section number
SMACNA—2012	HVAC Air Duct Leakage Test Manual	C403.10.2.3

UL

Underwriters Laboratories
 333 Pfingsten Road
 Northbrook, IL 60062-2096

Standard reference number	Title	Referenced in code section number
710—12	Exhaust Hoods for Commercial Cooking Equipment	C403.7.5
727—((06)) <u>18</u>	Oil-fired Central Furnaces—with Revisions through April 2010	Table C403.3.2(4), Table C403.3.2(5)
731—((95)) <u>18</u>	Oil-fired Unit Heaters—with Revisions through April 2010	Table C403.3.2(((4))) (5)

GENERAL REQUIREMENTS

US-FTC

United States-Federal Trade Commission
600 Pennsylvania Avenue N.W.
Washington, D.C. 20580

Standard reference number	Title	Referenced in code section number
C.F.R. Title 16 (2015)	R-value Rule	C303.1.4

WDMA

Window and Door Manufacturers Association
1400 East Touhy Avenue, Suite 470
Des Plaines, IL 60018

Standard reference number	Title	Referenced in code section number
AAMA/WDMA/CSA 101/IS.2/A440—17	North American Fenestration Standard/Specification for Windows, Doors and Unit Skylights	Table C402.4.2
