

CHAPTER 63

CODES AND STANDARDS

THE codes and standards and other publications listed here represent practices, methods, or standard published by the organizations indicated. They are useful guides for the practicing engineer in determining test methods, ratings, performance requirements, and limits of HVAC&R equipment. Copies of these publications can be obtained from most of the organizations listed in the Publisher column, from Global Engineering Documents at global.ihs.com, or from Techstreet at techstreet.com. Addresses of the organizations are given at the end of the chapter. A comprehensive database with over 300,000 industry, government, and international standards is at www.nssn.org.

Selected Codes and Standards Published by Various Societies and Associations

| Subject | Title | Publisher | Reference |
|-------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------|
| <i>Air Con- ditioners</i> | Commercial Systems Overview | ACCA | ACCA Manual CS |
| | Residential Equipment Selection, 2nd ed. | ACCA | ANSI/ACCA Manual S® |
| | Methods of Testing for Rating Ducted Air Terminal Units | ASHRAE | ANSI/ASHRAE 130-2008 |
| | Non-Ducted Air Conditioners and Heat Pumps—Testing and Rating for Performance | ISO | ISO 5151:2010 |
| | Ducted Air-Conditioners and Air-to-Air Heat Pumps—Testing and Rating for Performance | ISO | ISO 13253:2011 |
| | Guidelines for Roof Mounted Outdoor Air-Conditioner Installations | SMACNA | SMACNA 1997 |
| | Heating and Cooling Equipment | UL/CSA | ANSI/UL 1995-2011/C22.2 No. 236-11 |
| | Performance Standard for Split-System and Single-Package Central Air Conditioners and Heat Pumps | CSA | CAN/CSA-C656-14 |
| Gas-Fired | Performance Standard for Rating Large and Single Packaged Air Conditioners and Heat Pumps | CSA | CAN/CSA-C746-06 (R2012) |
| | Gas-Fired, Heat Activated Air Conditioning and Heat Pump Appliances | CSA | ANSI Z21.40.1-1996/CGA 2.91-M96 (R2012) |
| | Gas-Fired Work Activated Air Conditioning and Heat Pump Appliances (Internal Combustion) | CSA | ANSI Z21.40.2-1996/CGA 2.92-M96 (R2002) |
| Packaged Terminal Room | Performance Testing and Rating of Gas-Fired Air Conditioning and Heat Pump Appliances | CSA | ANSI Z21.40.4-1996/CGA 2.94-M96 (R2002) |
| | Packaged Terminal Air-Conditioners and Heat Pumps | AHRI/CSA | AHRI 310/380-2014/CSA C744-14 |
| Room | Room Air Conditioners | AHAM | ANSI/AHAM RAC-1-2014 |
| | Method of Testing for Rating Room Air Conditioners and Packaged Terminal Air Conditioners | ASHRAE | ANSI/ASHRAE 16-1983 (RA09) |
| | Method of Testing for Rating Room Air Conditioner and Packaged Terminal Air Conditioner Heating Capacity | ASHRAE | ANSI/ASHRAE 58-1986 (RA14) |
| | Method of Testing for Rating Fan-Coil Conditioners | ASHRAE | ANSI/ASHRAE 79-2002 (RA06) |
| | Energy Performance of Room Air Conditioners | CSA | CAN/CSA-C368.1-14 |
| | Room Air Conditioners | CSA | C22.2 No. 117-1970 (R2012) |
| | Room Air Conditioners, Ed. 7 | UL | ANSI/UL 484-2014 |
| Unitary | Unitary Air-Conditioning and Air-Source Heat Pump Equipment | AHRI | ANSI/AHRI 210/240-2008 |
| | Sound Rating of Outdoor Unitary Equipment | AHRI | AHRI 270-2008 |
| | Application of Sound Rating Levels of Outdoor Unitary Equipment | AHRI | AHRI 275-2010 |
| | Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment | AHRI | AHRI 340/360-2007 |
| | Methods of Testing for Rating Electrically Driven Unitary Air-Conditioning and Heat Pump Equipment | ASHRAE | ANSI/ASHRAE 37-2009 |
| | Methods of Testing for Rating Heat Operated Unitary Air-Conditioning and Heat-Pump Equipment | ASHRAE | ANSI/ASHRAE 40-2014 |
| | Methods of Testing for Rating Seasonal Efficiency of Unitary Air Conditioners and Heat Pumps | ASHRAE | ANSI/ASHRAE 116-2010 |
| | Method of Testing for Rating Computer and Data Processing Room Unitary Air Conditioners | ASHRAE | ANSI/ASHRAE 127-2012 |
| | Method of Rating Unitary Spot Air Conditioners | ASHRAE | ANSI/ASHRAE 128-2011 |
| | Ships | Specification for Mechanically Refrigerated Shipboard Air Conditioner | ASTM |
| Accessories | Flashing and Stand Combination for Air Conditioning Units (Unit Curb) | IAPMO | IAPMO PS 120-2004 |
| <i>Air Con- ditioning</i> | Commercial Systems Overview | ACCA | ACCA Manual CS |
| | Heat Pump Systems | ACCA | ACCA Manual H |
| | Residential Load Calculation, 8th ed. | ACCA | ANSI/ACCA Manual J |
| | Commercial Load Calculation, 5th ed. | ACCA | ACCA Manual N |
| | Comfort, Air Quality, and Efficiency by Design | ACCA | ACCA Manual RS |
| | Peak Cooling and Heating Load Calculations in Buildings Except Low-Rise Residential Buildings | ASHRAE/ ACCA | ANSI/ASHRAE/ACCA 183-2007 (RA14) |

Selected Codes and Standards Published by Various Societies and Associations (Continued)

| Subject | Title | Publisher | Reference |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------------------|
| | Environmental Systems Technology, 2nd ed. (1999) | NEBB | NEBB |
| | Installation of Air-Conditioning and Ventilating Systems | NFPA | NFPA 90A-2015 |
| | Standard of Purity for Use in Mobile Air-Conditioning Systems | SAE | SAE J1991-2011 |
| | HVAC Systems Applications, 2nd ed. | SMACNA | SMACNA 2010 |
| | HVAC Systems—Duct Design, 4th ed. | SMACNA | SMACNA 2006 |
| | Heating and Cooling Equipment | UL/CSA | ANSI/UL 1995-2011/C22.2 No. 236-11 |
| Aircraft | Air Conditioning of Aircraft Cargo | SAE | SAE AIR806B-1997 (R2011) |
| | Aircraft Fuel Weight Penalty Due to Air Conditioning | SAE | SAE AIR1168/8-2011 |
| | Air Conditioning Systems for Subsonic Airplanes | SAE | SAE ARP85F-2012 |
| | Environmental Control Systems Terminology | SAE | SAE ARP147E-2001 (R2012) |
| | Testing of Airplane Installed Environmental Control Systems (ECS) | SAE | SAE ARP217D-1999 (R2011) |
| | Guide for Qualification Testing of Aircraft Air Valves | SAE | SAE ARP986D-2008 |
| | Control of Excess Humidity in Avionics Cooling | SAE | SAE ARP987B-2010 |
| | Engine Bleed Air Systems for Aircraft | SAE | SAE ARP1796B-2012 |
| | Aircraft Ground Air Conditioning Service Connection | SAE | SAE AS4262B-2012 |
| | Air Cycle Air Conditioning Systems for Military Air Vehicles | SAE | SAE AS4073A-2013 |
| Automotive | Refrigerant 12 Automotive Air-Conditioning Hose | SAE | SAE J51-2004 |
| | Design Guidelines for Air Conditioning Systems for Off-Road Operator Enclosures | SAE | SAE J169-2013 |
| | Test Method for Measuring Power Consumption of Air Conditioning and Brake Compressors for Trucks and Buses | SAE | SAE J1340-2011 |
| | Information Relating to Duty Cycles and Average Power Requirements of Truck and Bus Engine Accessories | SAE | SAE J1343-2000 |
| | Rating Air-Conditioner Evaporator Air Delivery and Cooling Capacities | SAE | SAE J1487-2013 |
| | Recovery and Recycle Equipment for Mobile Automotive Air-Conditioning Systems | SAE | SAE J1990-2011 |
| | R134a Refrigerant Automotive Air-Conditioning Hose | SAE | SAE J2064-2011 |
| | Service Hose for Automotive Air Conditioning | SAE | SAE J2196-2011 |
| Ships | Mechanical Refrigeration and Air-Conditioning Installations Aboard Ship | ASHRAE | ANSI/ASHRAE 26-2010 |
| | Practice for Mechanical Symbols, Shipboard Heating, Ventilation, and Air Conditioning (HVAC) | ASTM | ASTM F856-97 (2014) |
| Air Curtains | Laboratory Methods of Testing Air Curtains for Aerodynamic Performance | AMCA | AMCA 220-05 (R2012) |
| | Air Terminals | AHRI | AHRI 881-2011 |
| | Standard Methods for Laboratory Airflow Measurement | ASHRAE | ANSI/ASHRAE 41.2-1987 (RA92) |
| | Method of Testing the Performance of Air Outlets and Inlets | ASHRAE | ANSI/ASHRAE 70-2006 (RA11) |
| | Residential Mechanical Ventilating Systems | CSA | CAN/CSA-F326-M91 (R2010) |
| | Air Curtains for Entranceways in Food and Food Service Establishments | NSF | ANSI/NSF 37-2012 |
| Air Diffusion | Air Distribution Basics for Residential and Small Commercial Buildings | ACCA | ACCA Manual T |
| | Method of Testing the Performance of Air Outlets and Inlets | ASHRAE | ANSI/ASHRAE 70-2006 (RA11) |
| | Method of Testing for Room Air Diffusion | ASHRAE | ANSI/ASHRAE 113-2013 |
| Air Filters | Comfort, Air Quality, and Efficiency by Design | ACCA | ACCA Manual RS |
| | Industrial Ventilation: A Manual of Recommended Practice, 28th ed. (2013) | ACGIH | ACGIH |
| | Air Cleaners—Portable | AHAM | ANSI/AHAM AC-1-2013 |
| | Residential Air Filter Equipment | AHRI | ANSI/AHRI 681-2009 |
| | Commercial and Industrial Air Filter Equipment | AHRI | ANSI/AHRI 850-2013 |
| | Guideline for Field Testing of General Ventilation Filtration Devices and Systems for Removal Efficiency In-Situ by Particle Size and Resistance to Airflow | ASHRAE | ASHRAE <i>Guideline</i> 26-2012 |
| | Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size | ASHRAE | ANSI/ASHRAE 52.2-2012 |
| | Laboratory Test Method for Assessing the Performance of Gas Phase Air Cleaning Systems: Loose Granular Media | ASHRAE | ANSI/ASHRAE 145.1-2008 |
| | Laboratory Test Method for Assessing the Performance of Gas Phase Air Cleaning Systems: Air Cleaning Devices | ASHRAE | ANSI/ASHRAE 145.2-2011 |
| | Code on Nuclear Air and Gas Treatment | ASME | ASME AG-1-2012 |
| | Nuclear Power Plant Air-Cleaning Units and Components | ASME | ASME N509-2002 |
| | Testing of Nuclear Air-Treatment Systems | ASME | ASME N510-2007 |
| | Test Method for Air Cleaning Performance of a High-Efficiency Particulate Air Filter System | ASTM | ASTM F1471-09 |
| | Specification for Filters Used in Air or Nitrogen Systems | ASTM | ASTM F1791-00 (2013) |
| | Method for Sodium Flame Test for Air Filters | BSI | BS 3928:1969 |
| | Particulate Air Filters for General Ventilation: Determination of Filtration Performance | BSI | BS EN 779:2002 |
| | Electrostatic Air Cleaners | UL | ANSI/UL 867-2011 |
| | High-Efficiency, Particulate, Air Filter Units | UL | ANSI/UL 586-2009 |

Selected Codes and Standards Published by Various Societies and Associations (Continued)

| Subject | Title | Publisher | Reference |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------------------------|
| | Air Filter Units | UL | ANSI/UL 900-2004 |
| | Exhaust Hoods for Commercial Cooking Equipment | UL | UL 710-2012 |
| | Grease Filters for Exhaust Ducts | UL | UL 1046-2010 |
| <i>Air-Handling Units</i> | Commercial Systems Overview | ACCA | ACCA Manual CS |
| | Central Station Air-Handling Units | AHRI | ANSI/AHRI 430-2014 |
| | Non-Recirculating Direct Gas-Fired Industrial Air Heaters | CSA | ANSI Z83.4-2013/CSA 3.7-2013 |
| <i>Air Leakage</i> | Residential Duct Diagnostics and Repair | ACCA | ACCA |
| | Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings | ASHRAE | ANSI/ASHRAE 62.2-2013 |
| | Method of Test for Determining the Airtightness of HVAC Equipment | ASHRAE | ANSI/ASHRAE 193-2010 (RA14) |
| | Test Method for Determining Air Change in a Single Zone by Means of a Tracer Gas Dilution | ASTM | ASTM E741-11 |
| | Test Method for Determining Air Leakage Rate by Fan Pressurization | ASTM | ASTM E779-10 |
| | Test Method for Field Measurement of Air Leakage Through Installed Exterior Window and Doors | ASTM | ASTM E783-02 (2010) |
| | Practices for Air Leakage Site Detection in Building Envelopes and Air Barrier Systems | ASTM | ASTM E1186-03 (2009) |
| | Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure and Temperature Differences Across the Specimen | ASTM | ASTM E1424-91 (2008) |
| | Test Methods for Determining Airtightness of Buildings Using an Orifice Blower Door | ASTM | ASTM E1827-11 |
| | Practice for Determining the Effects of Temperature Cycling on Fenestration Products | ASTM | ASTM E2264-05 (2013) |
| | Test Method for Determining Air Flow Through the Face and Sides of Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen | ASTM | ASTM E2319-04 (2011) |
| | Test Method for Determining Air Leakage of Air Barrier Assemblies | ASTM | ASTM E2357-11 |
| | HVAC Air Duct Leakage Test Manual, 2nd ed. | SMACNA | SMACNA 2012 |
| <i>Boilers</i> | Packaged Boiler Engineering Manual (1998) | ABMA | ABMA 100 |
| | Selected Codes and Standards of the Boiler Industry (2001) | ABMA | ABMA 103 |
| | Operation and Maintenance Safety Manual (1995) | ABMA | ABMA 106 |
| | Fluidized Bed Combustion Guidelines (1995) | ABMA | ABMA 200 |
| | Guide to Clean and Efficient Operation of Coal Stoker-Fired Boilers (2002) | ABMA | ABMA 203 |
| | Guideline for Performance Evaluation of Heat Recovery Steam Generating Equipment (1995) | ABMA | ABMA 300 |
| | Guidelines for Industrial Boiler Performance Improvement (1999) | ABMA | ABMA 302 |
| | Measurement of Sound from Steam Generators (1995) | ABMA | ABMA 304 |
| | Guideline for Gas and Oil Emission Factors for Industrial, Commercial, and Institutional Boilers (1997) | ABMA | ABMA 305 |
| | Combustion Control Guidelines for Single Burner Firetube and Watertube Industrial/Commercial/Institutional Boilers (1999) | ABMA | ABMA 307 |
| | Combustion Control Guidelines for Multiple-Burner Boilers (2001) | ABMA | ABMA 308 |
| | Boiler Water Quality Requirements and Associated Steam Quality for Industrial/Commercial and Institutional Boilers (2005) | ABMA | ABMA 402 |
| | Commercial Systems Overview | ACCA | ACCA Manual CS |
| | Method of Testing for Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers | ASHRAE | ANSI/ASHRAE 103-2007 |
| | Boiler and Pressure Vessel Code—Section I: Power Boilers; Section IV: Heating Boilers | ASME | BPVC-2015 |
| | Fired Steam Generators | ASME | ASME PTC 4-2013 |
| | Boiler, Pressure Vessel, and Pressure Piping Code | CSA | CSA B51-14 |
| | Testing Standard, Method to Determine Efficiency of Commercial Heating Boilers, 2nd ed. (2007) | HYDI | HYDI BTS-2000 |
| | Rating Procedure for Heating Boilers, 6th ed. (2005) | HYDI | IBR |
| | Single Burner Boiler Operations | NFPA | ANSI/NFPA 8501-97 |
| | Prevention of Furnace Explosions/Implosions in Multiple Burner Boilers | NFPA | ANSI/NFPA 8502-99 |
| | Heating, Water Supply, and Power Boilers—Electric | UL | ANSI/UL 834-2004 |
| | Boiler and Combustion Systems Hazards Code | NFPA | NFPA 85-11 |
| Gas or Oil | Gas-Fired Low-Pressure Steam and Hot Water Boilers | CSA | ANSI Z21.13-2014/CSA 4.9-2014 |
| | Controls and Safety Devices for Automatically Fired Boilers | ASME | ASME CSD-1-2012 |
| | Industrial and Commercial Gas-Fired Package Boilers | CSA | CAN 1-3.1-77 (R2011) |
| | Oil-Burning Equipment: Steam and Hot-Water Boilers | CSA | B140.7-05 (R2010) |
| | Oil-Fired Boiler Assemblies | UL | UL 726-1995 |
| | Commercial-Industrial Gas Heating Equipment | UL | UL 795-2011 |
| | Standards and Typical Specifications for Tray Type Deaerators, 9th ed. (2011) | HEI | HEI 2954 |
| Terminology | Ultimate Boiler Industry Lexicon: Handbook of Power Utility and Boiler Terms and Phrases, 6th ed. (2001) | ABMA | ABMA 101 |

Selected Codes and Standards Published by Various Societies and Associations (*Continued*)

| Subject | Title | Publisher | Reference | |
|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|-------------------|
| Building Codes | ASTM Standards Used in Building Codes | ASTM | ASTM | |
| | Practice for Conducting Visual Assessments for Lead Hazards in Buildings | ASTM | ASTM E2255M-13 | |
| | Standard Practice for Periodic Inspection of Building Facades for Unsafe Conditions | ASTM | ASTM E2270-14 | |
| | Standard Practice for Building Enclosure Commissioning | ASTM | ASTM E2813-12 | |
| | Structural Welding Code—Steel | AWS | AWS D1.1M/D1.1:2010 | |
| | BOCA National Building Code, 14th ed. (1999) | BOCA | BNBC | |
| | Uniform Building Code, vol. 1, 2, and 3 (1997) | ICBO | UBC V1, V2, V3 | |
| | International Building Code® (2015) | ICC | IBC | |
| | International Code Council Performance Code® (2015) | ICC | ICC PC | |
| | International Existing Building Code® (2015) | ICC | IEBC | |
| | International Energy Conservation Code® (2015) | ICC | IECC | |
| | International Property Maintenance Code® (2015) | ICC | IPMC | |
| | International Residential Code® (2015) | ICC | IRC | |
| | Building Construction and Safety Code® | NFPA | ANSI/NFPA 5000-2015 | |
| | National Building Code of Canada (2010) | NRCC | NRCC | |
| | Standard Building Code (1999) | SBCCI | SBC | |
| | Mechanical | Safety Code for Elevators and Escalators | ASME | ASME A17.1-2013 |
| | | Natural Gas and Propane Installation Code | CSA | CAN/CSA-B149.1-10 |
| | | Propane Storage and Handling Code | CSA | CAN/CSA-B149.2-10 |
| | | Uniform Mechanical Code (2012) | IAPMO | IAPMO |
| International Mechanical Code® (2015) | | ICC | IMC | |
| International Fuel Gas Code® (2015) | | ICC | IFGC | |
| Standard Gas Code (1999) | | SBCCI | SBC | |
| Burners | Domestic Gas Conversion Burners | CSA | ANSI Z21.17-1998/CSA 2.7-M98 (R2014) | |
| | Installation of Domestic Gas Conversion Burners | CSA | ANSI Z21.8-1994 (R2012) | |
| | Installation Code for Oil Burning Equipment | CSA | CAN/CSA-B139-09 (R2014) | |
| | Oil-Burning Equipment: General Requirements | CSA | CAN/CSA-B140.0-03 (R2013) | |
| | Vapourizing-Type Oil Burners | CSA | B140.1-1966 (R2011) | |
| | Atomizing-Type Oil Burners | CSA | CAN/CSA-B140.2.1-10 | |
| | Pressure Atomizing Oil Burner Nozzles | CSA | B140.2.2-1971 (R2011) | |
| | Oil Burners | UL | ANSI/UL 296-2003 | |
| | Waste Oil-Burning Air-Heating Appliances | UL | ANSI/UL 296A-1995 | |
| | Commercial-Industrial Gas Heating Equipment | UL | UL 795-2011 | |
| Commercial/Industrial Gas and/or Oil-Burning Assemblies with Emission Reduction Equipment | UL | UL 2096-2006 | | |
| Chillers | Commercial Systems Overview | ACCA | ACCA Manual CS | |
| | Absorption Water Chilling and Water Heating Packages | AHRI | ANSI/AHRI 560-2000 | |
| | Water Chilling Packages Using the Vapor Compression Cycle | AHRI | ANSI/AHRI 551/591-2011 | |
| | Method of Testing Liquid-Chilling Packages | ASHRAE | ANSI/ASHRAE 30-1995 | |
| | Method of Testing Absorption Water-Chilling and Water-Heating Packages | ASHRAE | ANSI/ASHRAE 182-2008 (RA13) | |
| Performance Standard for Rating Packaged Water Chillers | CSA | CAN/CSA C743-09 | | |
| Chimneys | Specification for Clay Flue Liners | ASTM | ASTM C315-07 (2011) | |
| | Specification for Industrial Chimney Lining Brick | ASTM | ASTM C980-13a | |
| | Practice for Installing Clay Flue Lining | ASTM | ASTM C1283-11 | |
| | Guide for Design and Construction of Brick Liners for Industrial Chimneys | ASTM | ASTM C1298-95 (2013) | |
| | Guide for Design, Fabrication, and Erection of Fiberglass Reinforced Plastic (FRP) Chimney Liners with Coal-Fired Units | ASTM | ASTM D5364-14 | |
| | Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances | NFPA | ANSI/NFPA 211-2013 | |
| | Medium Heat Appliance Factory-Built Chimneys | UL | ANSI/UL 959-2010 | |
| Factory-Built Chimneys for Residential Type and Building Heating Appliance | UL | ANSI/UL 103-2010 | | |
| Cleanrooms | Practice for Cleaning and Maintaining Controlled Areas and Clean Rooms | ASTM | ASTM E2042/E2042M-09 | |
| | Practice for Design and Construction of Aerospace Cleanrooms and Contamination Controlled Areas | ASTM | ASTM E2217-12 | |
| | Practice for Tests of Cleanroom Materials | ASTM | ASTM E2312-11 | |
| | Practice for Aerospace Cleanrooms and Associated Controlled Environments—Cleanroom Operations | ASTM | ASTM E2352-04 (2010) | |
| | Test Method for Sizing and Counting Airborne Particulate Contamination in Clean Rooms and Other Dust-Controlled Areas Designed for Electronic and Similar Applications | ASTM | ASTM F25/F25M-09 | |
| | Practice for Continuous Sizing and Counting of Airborne Particles in Dust-Controlled Areas and Clean Rooms Using Instruments Capable of Detecting Single Sub-Micrometre and Larger Particles | ASTM | ASTM F50-12 | |

Selected Codes and Standards Published by Various Societies and Associations (Continued)

| Subject | Title | Publisher | Reference |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------------------------------|
| | Procedural Standards for Certified Testing of Cleanrooms, 3rd ed. (2009) | NEBB | NEBB |
| Climate Data | Climatic Data for Building Design Standards | ASHRAE | ANSI/ASHRAE 169-2013 |
| Coils | Forced-Circulation Air-Cooling and Air-Heating Coils | AHRI | AHRI 410-2001 |
| | Methods of Testing Forced Circulation Air Cooling and Air Heating Coils | ASHRAE | ANSI/ASHRAE 33-2000 |
| Comfort Conditions | Threshold Limit Values for Physical Agents (updated annually) | ACGIH | ACGIH |
| | Comfort, Air Quality, and Efficiency by Design | ACCA | ACCA Manual RS |
| | Thermal Environmental Conditions for Human Occupancy | ASHRAE | ANSI/ASHRAE 55-2013 |
| | Classification for Serviceability of an Office Facility for Thermal Environment and Indoor Air Conditions | ASTM | ASTM E2320-04 (2012) |
| | Hot Environments—Estimation of the Heat Stress on Working Man, Based on the WBGT Index (Wet Bulb Globe Temperature) | ISO | ISO 7243:1989 |
| | Ergonomics of the Thermal Environment—Analytical Determination and Interpretation of Thermal Comfort Using Calculation of the PMV and PPD Indices and Local Thermal Comfort Criteria | ISO | ISO 7730:2005 |
| | Ergonomics of the Thermal Environment—Determination of Metabolic Rate | ISO | ISO 8996:2004 |
| | Ergonomics of the Thermal Environment—Estimation of the Thermal Insulation and Water Vapour Resistance of a Clothing Ensemble | ISO | ISO 9920:2007 |
| Commissioning | The Commissioning Process | ASHRAE | ASHRAE <i>Guideline</i> 0-2013 |
| | HVAC Systems—Commissioning Manual, 2nd ed. | SMACNA | SMACNA 2013 |
| | HVAC&R Technical Requirements for the Commissioning Process | ASHRAE | ASHRAE <i>Guideline</i> 1.1-2007 |
| | Commissioning Process for Buildings and Systems | ASHRAE | ASHRAE 202-2013 |
| | Standard Practice for Building Enclosure Commissioning | ASTM | ASTM E2813-12 |
| Compressors | Displacement Compressors, Vacuum Pumps and Blowers | ASME | ASME PTC 9-1970 |
| | Performance Test Code on Compressors and Exhausters | ASME | ASME PTC 10-1997 (RA14) |
| | Compressed Air and Gas Handbook, 6th ed. (2003) | CAGI | CAGI |
| Refrigerant | Positive Displacement Condensing Units | AHRI | ANSI/AHRI 520-2004 |
| | Positive Displacement Refrigerant Compressors and Compressor Units | AHRI | ANSI/AHRI 540-2004 |
| | Safety Standard for Refrigeration Systems | ASHRAE | ANSI/ASHRAE 15-2013 |
| | Methods of Testing for Rating Positive Displacement Refrigerant Compressors and Condensing Units That Operate at Subcritical Temperatures of the Refrigerant | ASHRAE | ANSI/ASHRAE 23.1-2010 |
| | Testing of Refrigerant Compressors | ISO | ISO 917:1989 |
| | Refrigerant Compressors—Presentation of Performance Data | ISO | ISO 9309:1989 |
| | Hermetic Refrigerant Motor-Compressors | UL/CSA | UL 984-1996/C22.2 No.140.2-96 (R2011) |
| Computers | Method of Testing for Rating Computer and Data Processing Room Unitary Air Conditioners | ASHRAE | ANSI/ASHRAE 127-2012 |
| | Method of Test for the Evaluation of Building Energy Analysis Computer Programs | ASHRAE | ANSI/ASHRAE 140-2011 |
| | Fire Protection of Information Technology Equipment | NFPA | NFPA 75-2013 |
| Condensers | Commercial Systems Overview | ACCA | ACCA Manual CS |
| | Water-Cooled Refrigerant Condensers, Remote Type | AHRI | AHRI 450-2007 |
| | Remote Mechanical-Draft Air-Cooled Refrigerant Condensers | AHRI | ANSI/AHRI 460-2005 |
| | Remote Mechanical Draft Evaporative Refrigerant Condensers | AHRI | ANSI/AHRI 491-2011 |
| | Safety Standard for Refrigeration Systems | ASHRAE | ANSI/ASHRAE 15-2013 |
| | Methods of Testing for Rating Remote Mechanical-Draft Air-Cooled Refrigerant Condensers | ASHRAE | ANSI/ASHRAE 20-1997 (RA06) |
| | Methods of Testing for Rating Liquid Water-Cooled Refrigerant Condensers | ASHRAE | ANSI/ASHRAE 22-2014 |
| | Methods of Testing for Rating Positive Displacement Refrigerant Compressors and Condensing Units That Operate at Subcritical Temperatures of the Refrigerant | ASHRAE | ANSI/ASHRAE 23.1-2010 |
| | Methods of Laboratory Testing Remote Mechanical-Draft Evaporative Refrigerant Condensers | ASHRAE | ANSI/ASHRAE 64-2011 |
| | Steam Surface Condensers | ASME | ASME PTC 12.2-2010 |
| | Standards for Steam Surface Condensers, 11th ed. (2012) | HEI | HEI 2629 |
| | Standards for Direct Contact Barometric and Low Level Condensers, 8th ed. (2010) | HEI | HEI 2634 |
| | Refrigerant-Containing Components and Accessories, Nonelectrical | UL | ANSI/UL 207-2009 |
| Condensing Units | Commercial Systems Overview | ACCA | ACCA Manual CS |
| | Commercial and Industrial Unitary Air-Conditioning Condensing Units | AHRI | ANSI/AHRI 366-2009 |
| | Methods of Testing for Rating Positive Displacement Refrigerant Compressors and Condensing Units | ASHRAE | ANSI/ASHRAE 23.1-2010 |
| | Heating and Cooling Equipment | UL/CSA | ANSI/UL 1995-2011/C22.2 No. 236-11 |
| Containers | Series 1 Freight Containers—Classifications, Dimensions, and Ratings | ISO | ISO 668:2013 |

Selected Codes and Standards Published by Various Societies and Associations (Continued)

| Subject | Title | Publisher | Reference |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------|
| | Series 1 Freight Containers—Specifications and Testing; Part 2: Thermal Containers | ISO | ISO 1496-2:2008 |
| | Animal Environment in Cargo Compartments | SAE | SAE AIR1600B-2010 |
| Controls | Temperature Control Systems (2002) | AABC | National Standards, Ch. 12 |
| | Field Testing of HVAC Controls Components | ASHRAE | ASHRAE <i>Guideline</i> 11-2009 |
| | Specifying Direct Digital Control Systems | ASHRAE | ASHRAE <i>Guideline</i> 13-2014 |
| | BACnet™—A Data Communication Protocol for Building Automation and Control Networks | ASHRAE | ANSI/ASHRAE 135-2012 |
| | Method of Test for Conformance to BACnet® | ASHRAE | ANSI/ASHRAE 135.1-2013 |
| | Method of Test for Rating Air Terminal Unit Controls | ASHRAE | ASHRAE 195-2013 |
| | Temperature-Indicating and Regulating Equipment | CSA | C22.2 No. 24-15 |
| | Performance Requirements for Thermostats Used with Individual Room Electric Space Heating Devices | CSA | CAN/CSA C828-13 |
| | Solid-State Controls for Appliances | UL | UL 244A-2003 |
| | Limit Controls | UL | ANSI/UL 353-1994 |
| | Primary Safety Controls for Gas- and Oil-Fired Appliances | UL | ANSI/UL 372-1994 |
| | Temperature-Indicating and -Regulating Equipment | UL | UL 873-2007 |
| | Tests for Safety-Related Controls Employing Solid-State Devices | UL | UL 991-2004 |
| | Automatic Electrical Controls for Household and Similar Use; Part 1: General Requirements | UL | UL 60730-1-2009 |
| Commercial and Industrial | Guidelines for Boiler Control Systems (Gas/Oil Fired Boilers) (1998) | ABMA | ABMA 301 |
| | Guideline for the Integration of Boilers and Automated Control Systems in Heating Applications (1998) | ABMA | ABMA 306 |
| | Industrial Control and Systems: General Requirements | NEMA | NEMA ICS 1-2000 (R2008) |
| | Preventive Maintenance of Industrial Control and Systems Equipment | NEMA | NEMA ICS 1.3-1986 (R2009) |
| | Industrial Control and Systems, Controllers, Contactors, and Overload Relays Rated Not More than 2000 Volts AC or 750 Volts DC | NEMA | NEMA ICS 2-2000 (R2005) |
| | Industrial Control and Systems: Instructions for the Handling, Installation, Operation and Maintenance of Motor Control Centers Rated Not More than 600 Volts | NEMA | NEMA ICS 2.3-1995 (R2008) |
| | Industrial Control Equipment | UL | ANSI/UL 508-2007 |
| Residential | Manually Operated Gas Valves for Appliances, Appliance Connector Valves and Hose End Valves | CSA | ANSI Z21.15-2009/CSA 9.1-2009 (R2014) |
| | Gas Appliance Pressure Regulators | CSA | ANSI Z21.18-2007/CSA 6.3-2007 (R2012) |
| | Automatic Gas Ignition Systems and Components | CSA | ANSI Z21.20-2005 |
| | Gas Appliance Thermostats | CSA | ANSI Z21.23-2010 |
| | Manually-Operated Piezo-Electric Spark Gas Ignition Systems and Components | CSA | ANSI Z21.77-2005/CSA 6.23-2005 (R2011) |
| | Manually Operated Electric Gas Ignition Systems and Components | CSA | ANSI Z21.92-2001/CSA 6.29-2001 (R2012) |
| | Residential Controls—Electrical Wall-Mounted Room Thermostats | NEMA | NEMA DC 3-2013 |
| | Residential Controls—Surface Type Controls for Electric Storage Water Heaters | NEMA | NEMA DC 5-1989 (R2008) |
| | Residential Controls—Temperature Limit Controls for Electric Baseboard Heaters | NEMA | NEMA DC 10-2009 |
| | Residential Controls—Hot-Water Immersion Controls | NEMA | NEMA DC 12-1985 (R2013) |
| | Line-Voltage Integrally Mounted Thermostats for Electric Heaters | NEMA | NEMA DC 13-1979 (R2013) |
| | Residential Controls—Class 2 Transformers | NEMA | NEMA DC 20-1992 (R2009) |
| | Safety Guidelines for the Application, Installation, and Maintenance of Solid State Controls | NEMA | NEMA ICS 1.1-1984 (R2009) |
| | Electrical Quick-Connect Terminals | UL | ANSI/UL 310-2014 |
| Coolers | Refrigeration Equipment | CSA | CAN/CSA-C22.2 No. 120-13 |
| | Unit Coolers for Refrigeration | AHRI | ANSI/AHRI 420-2008 |
| | Refrigeration Unit Coolers | UL | ANSI/UL 412-2011 |
| Air Drinking Water | Methods of Testing Forced Convection and Natural Convection Air Coolers for Refrigeration | ASHRAE | ANSI/ASHRAE 25-2001 (RA06) |
| | Methods of Testing for Rating Drinking-Water Coolers with Self-Contained Mechanical Refrigeration | ASHRAE | ANSI/ASHRAE 18-2008 (RA13) |
| | Drinking-Water Coolers | UL | ANSI/UL 399-2008 |
| | Drinking Water System Components—Health Effects | NSF | ANSI/NSF 61-2014 |
| Evaporative | Method of Testing Direct Evaporative Air Coolers | ASHRAE | ANSI/ASHRAE 133-2008 |
| | Method of Test for Rating Indirect Evaporative Coolers | ASHRAE | ANSI/ASHRAE 143-2007 |
| Food and Beverage | Milking Machine Installations—Vocabulary | ASABE | ANSI/ASABE AD3918-2007 (R2011) |
| | Methods of Testing for Rating Vending Machines for Sealed Beverages | ASHRAE | ANSI/ASHRAE 32.1-2010 |
| | Methods of Testing for Rating Pre-Mix and Post-Mix Beverage Dispensing Equipment | ASHRAE | ANSI/ASHRAE 32.2-2003 (RA11) |
| | Manual Food and Beverage Dispensing Equipment | NSF | ANSI/NSF 18-2012 |
| | Commercial Bulk Milk Dispensing Equipment | NSF | ANSI/NSF 20-2012 |
| | Refrigerated Vending Machines | UL | ANSI/UL 541-2011 |

Selected Codes and Standards Published by Various Societies and Associations (Continued)

| Subject | Title | Publisher | Reference |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|--------------------------|---------------------------------|
| Liquid | Refrigerant-Cooled Liquid Coolers, Remote Type | AHRI | AHRI 480-2007 |
| | Methods of Testing for Rating Liquid Coolers | ASHRAE | ANSI/ASHRAE 24-2013 |
| | Liquid Cooling Systems | SAE | SAE AIR1811A-1997 (R2010) |
| Cooling Towers | Cooling Tower Testing (2002) | AABC | National Standards, Ch 13 |
| | Commercial Systems Overview | ACCA | ACCA Manual CS |
| | Bioaerosols: Assessment and Control (1999) | ACGIH | ACGIH |
| | Atmospheric Water Cooling Equipment | ASME | ASME PTC 23-2003 (RA14) |
| | Water-Cooling Towers | NFPA | NFPA 214-2011 |
| | Acceptance Test Code for Water-Cooling Towers | CTI | CTI ATC-105 (2000) |
| | Code for Measurement of Sound from Water Cooling Towers | CTI | CTI ATC-128 (2014) |
| | Nomenclature for Industrial Water Cooling Towers | CTI | CTI BUL-109 (1997) |
| | Recommended Practice for Airflow Testing of Cooling Towers | CTI | CTI PFM-143 (1994) |
| | Fiberglass-Reinforced Plastic Panels | CTI | CTI STD-131 (2009) |
| | Certification of Water Cooling Tower Thermal Performance | CTI | CTI STD-201RS (2013) |
| Crop Drying | Density, Specific Gravity, and Mass-Moisture Relationships of Grain for Storage | ASABE | ANSI/ASAE D241.4-1992 (R2012) |
| | Thermal Properties of Grain and Grain Products | ASABE | ASAE D243.4-2003 (R2012) |
| | Moisture Relationships of Plant-Based Agricultural Products | ASABE | ASAE D245.6-2007 (R2012) |
| | Dielectric Properties of Grain and Seed | ASABE | ASAE D293.4-2012 |
| | Construction and Rating of Equipment for Drying Farm Crops | ASABE | ASAE S248.3-1976 (R2010) |
| | Resistance to Airflow of Grains, Seeds, Other Agricultural Products, and Perforated Metal Sheets | ASABE | ASAE D272.3-1996 (R2011) |
| | Shelled Corn Storage Time for 0.5% Dry Matter Loss | ASABE | ASAE D535-2005 (R2010) |
| | Moisture Measurement—Unground Grain and Seeds | ASABE | ASAE S352.2-1998 (R2012) |
| | Moisture Measurement—Meat and Meat Products | ASABE | ASAE S353-1972 (R2012) |
| | Moisture Measurement—Forages | ASABE | ANSI/ASAE S358.3-2012 |
| | Moisture Measurement—Peanuts | ASABE | ASAE S410.2-2010 |
| | Thin-Layer Drying of Agricultural Crops | ASABE | ANSI/ASAE S448.1-2001 (R2012) |
| | Moisture Measurement—Tobacco | ASABE | ASAE S487-1987 (R2012) |
| | Energy Efficiency of Peanut Drying Systems | ASABE | ASAE S488.1-2013 |
| Temperature Sensor Locations for Seed-Cotton Drying Systems | ASABE | ASAE S530.1-2007 (R2012) | |
| Dampers | Laboratory Methods of Testing Dampers for Rating | AMCA | AMCA 500-D-07 |
| | Selecting Outdoor, Return, and Relief Dampers for Air-Side Economizer Systems | ASHRAE | ASHRAE <i>Guideline</i> 16-2014 |
| Dehumidifiers | Commercial Systems Overview | ACCA | ACCA Manual CS |
| | Bioaerosols: Assessment and Control (1999) | ACGIH | ACGIH |
| | Dehumidifiers | AHAM | ANSI/AHAM DH-1-2008 |
| | Method of Testing for Rating Desiccant Dehumidifiers Utilizing Heat for the Regeneration Process | ASHRAE | ANSI/ASHRAE 139-2007 |
| | Criteria for Moisture-Control Design Analysis in Buildings | ASHRAE | ANSI/ASHRAE 160-2009 |
| | Method of Test for Rating Desiccant-Based Dehumidification Equipment | ASHRAE | ANSI/ASHRAE 174-2009 |
| | Method of Testing for Rating Indoor Pool Dehumidifiers | ASHRAE | ANSI/ASHRAE 190-2013 |
| | Method of Testing for Rating DX-Dedicated Outdoor Air Systems for Moisture Removal Capacity and Moisture Removal Efficiency | ASHRAE | ANSI/ASHRAE 198-2013 |
| | Moisture Separator Reheaters | ASME | PTC 12.4-1992 (RA14) |
| | Dehumidifiers | CSA | C22.2 No. 92-1971 (R2013) |
| Performance of Dehumidifiers | CSA | CAN/CSA-C749-07 (R2012) | |
| Dehumidifiers | UL | ANSI/UL 474-2009 | |
| Desiccants | Method of Testing Desiccants for Refrigerant Drying | ASHRAE | ANSI/ASHRAE 35-2010 |
| Driers | Liquid-Line Driers | AHRI | ANSI/AHRI 711-2009 |
| | Method of Testing Liquid Line Refrigerant Driers | ASHRAE | ANSI/ASHRAE 63.1-1995 (RA01) |
| | Refrigerant-Containing Components and Accessories, Nonelectrical | UL | ANSI/UL 207-2009 |
| Ducts and Fittings | Hose, Air Duct, Flexible Nonmetallic, Aircraft | SAE | SAE AS1501C-1994 (R2013) |
| | Ducted Electric Heat Guide for Air Handling Systems, 2nd ed. | SMACNA | SMACNA 1994 |
| Construction | Factory-Made Air Ducts and Air Connectors | UL | ANSI/UL 181-2013 |
| | Industrial Ventilation: A Manual of Recommended Practice, 28th ed. (2013) | ACGIH | ACGIH |
| | Preferred Metric Sizes for Flat, Round, Square, Rectangular, and Hexagonal Metal Products | ASME | ASME B32.100-2005 |
| | Sheet Metal Welding Code | AWS | AWS D9.1M/D9.1:2012 |
| | Fibrous Glass Duct Construction Standards, 5th ed. | NAIMA | NAIMA AH116 |
| | Residential Fibrous Glass Duct Construction Standards, 3rd ed. | NAIMA | NAIMA AH119 |
| | Thermoplastic Duct (PVC) Construction Manual, 2nd ed. | SMACNA | SMACNA 1995 |
| | Accepted Industry Practices for Sheet Metal Lagging, 1st ed. | SMACNA | SMACNA 2002 |
| | Fibrous Glass Duct Construction Standards, 7th ed. | SMACNA | SMACNA 2003 |
| | Round Industrial Duct Construction Standards, 2nd ed. | SMACNA | SMACNA 1999 |

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| Subject | Title | Publisher | Reference | |
|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------|--------------------|
| Installation | Rectangular Industrial Duct Construction Standards, 2nd ed. | SMACNA | SMACNA 2007 | |
| | Flexible Duct Performance and Installation Standards, 5th ed. | ADC | ADC-91 | |
| Material Specifications | Installation of Air-Conditioning and Ventilating Systems | NFPA | NFPA 90A-2015 | |
| | Installation of Warm Air Heating and Air-Conditioning Systems | NFPA | NFPA 90B-2015 | |
| | Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet and Strip | ASTM | ASTM A480/A480M-14b | |
| | Specification for Steel, Sheet, Carbon, Structural, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements for | ASTM | ASTM A568/A568M-14 | |
| | Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dipped Process | ASTM | ASTM A653/A653M-13 | |
| | Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process | ASTM | ASTM A924/A924M-14 | |
| | Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable | ASTM | ASTM A1008/A1008M-13 | |
| | Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength | ASTM | ASTM A1011/A1011M-14 | |
| System Design | Practice for Measuring Flatness Characteristics of Coated Sheet Products | ASTM | ASTM A1030/A1030M-11 | |
| | Installation Techniques for Perimeter Heating and Cooling Residential Duct Systems | ACCA | ACCA Manual 4 | |
| | Commercial Low Pressure, Low Velocity Duct System Design | ACCA | ACCA Manual Q | |
| | Air Distribution Basics for Residential and Small Commercial Buildings | ACCA | ACCA Manual T | |
| | Method of Test for Determining the Design and Seasonal Efficiencies of Residential Thermal Distribution Systems | ASHRAE | ANSI/ASHRAE 152-2014 | |
| Testing | Closure Systems for Use with Rigid Air Ducts | UL | ANSI/UL 181A-2013 | |
| | Closure Systems for Use with Flexible Air Ducts and Air Connectors | UL | ANSI/UL 181B-2013 | |
| | Duct Leakage Testing (2002) | AABC | National Standards, Ch 5 | |
| | Residential Duct Diagnostics and Repair | ACCA | ACCA | |
| | Flexible Air Duct Test Code, 3rd ed. | ADC | ADC FD 72-R1 | |
| | Test Method for Measuring Acoustical and Airflow Performance of Duct Liner Materials and Prefabricated Silencers | ASTM | ASTM E477-13 | |
| | Method of Testing to Determine Flow Resistance of HVAC Ducts and Fittings | ASHRAE | ANSI/ASHRAE 120-2008 | |
| | Method of Testing HVAC Air Ducts and Fittings | ASHRAE | ANSI/ASHRAE/SMACNA 126-2008 | |
| | HVAC Air Duct Leakage Test Manual, 2nd ed. | SMACNA | SMACNA 2012 | |
| | HVAC Duct Systems Inspection Guide, 3rd ed. | SMACNA | SMACNA 2006 | |
| Economizers | Selecting Outdoor, Return, and Relief Dampers for Air-Side Economizer Systems | ASHRAE | ASHRAE <i>Guideline</i> 16-2014 | |
| Electrical | Electrical Power Systems and Equipment—Voltage Ratings | ANSI | ANSI C84.1-2011 | |
| | Test Method for Bond Strength of Electrical Insulating Varnishes by the Helical Coil Test | ASTM | ASTM D2519-07 (2012) | |
| | Standard Specification for Shelter, Electrical Equipment, Lightweight | ASTM | ASTM E2377-10 | |
| | Canadian Electrical Code, Part I (22nd ed.), Safety Standard for Electrical Installations Part II—General Requirements | CSA | CSA C22.1-12 | |
| | ICC Electrical Code, Administrative Provisions (2006) | CSA | CAN/CSA-C22.2 No. 0-10 | |
| | Low Voltage Cartridge Fuses | ICC | ICCEC | |
| | Industrial Control and Systems: Terminal Blocks | NEMA | NEMA FU 1-2012 | |
| | Industrial Control and Systems: Enclosures | NEMA | NEMA ICS 4-2010 | |
| | Application Guide for Ground Fault Protective Devices for Equipment | NEMA | ANSI/NEMA ICS 6-1993 (R2006) | |
| | General Color Requirements for Wiring Devices | NEMA | ANSI/NEMA PB 2.2-2014 | |
| | Wiring Devices—Dimensional Specifications | NEMA | NEMA WD 1-1999 (R2010) | |
| | National Electrical Code® | NEMA | ANSI/NEMA WD 6-2012 | |
| | National Fire Alarm and Signaling Code | NFPA | NFPA 70-2014 | |
| | Compatibility of Electrical Connectors and Wiring | NFPA | NFPA 72-2013 | |
| | Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures | SAE | SAE AIR1329-2014 | |
| | Energy | Air-Conditioning and Refrigerating Equipment Nameplate Voltages | UL | ANSI/UL 489-2013 |
| | | Air-Conditioning and Refrigerating Equipment Nameplate Voltages | AHRI | ANSI/AHRI 110-2012 |
| Comfort, Air Quality, and Efficiency by Design | | ACCA | ACCA Manual RS | |
| Measurement of Energy and Demand Savings | | ASHRAE | ASHRAE <i>Guideline</i> 14-2002 | |
| Energy Standard for Buildings Except Low-Rise Residential Buildings | | ASHRAE | ANSI/ASHRAE/IES 90.1-2013 | |
| Energy-Efficient Design of Low-Rise Residential Buildings | | ASHRAE | ANSI/ASHRAE/IES 90.2-2007 | |
| Energy Conservation in Existing Buildings | | ASHRAE | ANSI/ASHRAE/IES 100-2015 | |
| Methods of Determining, Expressing, and Comparing Building Energy Performance and Greenhouse Gas Emissions | | ASHRAE | ANSI/ASHRAE 105-2014 | |
| Method of Test for the Evaluation of Building Energy Analysis Computer Programs | ASHRAE | ANSI/ASHRAE 140-2011 | | |

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| Subject | Title | Publisher | Reference |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------------------|
| | Method of Test for Determining the Design and Seasonal Efficiencies of Residential Thermal Distribution Systems | ASHRAE | ANSI/ASHRAE 152-2014 |
| | Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings | ASHRAE/ USGBC | ANSI/ASHRAE/USGBC/IES 189.1-2014 |
| | Fuel Cell Power Systems Performance | ASME | PTC 50-2002 (RA14) |
| | International Energy Conservation Code® (2015) | ICC | IECC |
| | International Green Construction Code™ (2012) | ICC | IGCC |
| | Uniform Solar Energy Code (2012) | IAPMO | IAPMO |
| | Energy Management Guide for Selection and Use of Fixed Frequency Medium AC Squirrel-Cage Polyphase Induction Motors | NEMA | NEMA MG 10-2013 |
| | Energy Management Guide for Selection and Use of Single-Phase Motors | NEMA | NEMA MG 11-1977 (R2012) |
| | HVAC Systems—Commissioning Manual, 2nd ed. | SMACNA | SMACNA 2013 |
| | Building Systems Analysis and Retrofit Manual, 2nd ed. | SMACNA | SMACNA 2011 |
| | Energy Systems Analysis and Management, 2nd ed. | SMACNA | SMACNA 2014 |
| | Energy Management Equipment | UL | UL 916-2007 |
| Exhaust Systems | Fan Systems: Supply/Return/Relief/Exhaust (2002) | AABC | National Standards, Ch 10 |
| | Commercial Systems Overview | ACCA | ACCA Manual CS |
| | Industrial Ventilation: A Manual of Recommended Practice, 28th ed. (2013) | ACGIH | ACGIH |
| | Fundamentals Governing the Design and Operation of Local Exhaust Ventilation Systems | AIHA | ANSI/AIHA Z9.2-2012 |
| | Spray Finishing Operations: Safety Code for Design, Construction, and Ventilation | AIHA | ANSI/AIHA Z9.3-2007 |
| | Laboratory Ventilation | AIHA | ANSI/AIHA Z9.5-2012 |
| | Recirculation of Air from Industrial Process Exhaust Systems | AIHA | ANSI/AIHA Z9.7-2007 |
| | Method of Testing Performance of Laboratory Fume Hoods | ASHRAE | ANSI/ASHRAE 110-1995 |
| | Ventilation for Commercial Cooking Operations | ASHRAE | ANSI/ASHRAE 154-2011 |
| | Performance Test Code on Compressors and Exhausters | ASME | PTC 10-1997 (RA14) |
| | Flue and Exhaust Gas Analyses | ASME | PTC 19.10-1981 |
| | Mechanical Flue-Gas Exhausters | CSA | CAN B255-M81 (R2005) |
| | Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Particulate Solids | NFPA | ANSI/NFPA 91-2015 |
| | Draft Equipment | UL | UL 378-2006 |
| Expansion Valves | Thermostatic Refrigerant Expansion Valves | AHRI | ANSI/AHRI 750-2007 |
| | Method of Testing Capacity of Thermostatic Refrigerant Expansion Valves | ASHRAE | ANSI/ASHRAE 17-2008 |
| Fan-Coil Units | Industrial Ventilation: A Manual of Recommended Practice, 28th ed. (2013) | ACGIH | ACGIH |
| | Room Fan-Coils | AHRI | ANSI/AHRI 440-2008 |
| | Methods of Testing for Rating Fan-Coil Conditioners | ASHRAE | ANSI/ASHRAE 79-2002 (RA06) |
| | Heating and Cooling Equipment | UL/CSA | ANSI/UL 1995-2011/C22.2 No. 236-11 |
| Fans | Residential Duct Systems | ACCA | ANSI/ACCA Manual D |
| | Commercial Low Pressure, Low Velocity Duct System Design | ACCA | ACCA Manual Q |
| | Industrial Ventilation: A Manual of Recommended Practice, 28th ed. (2013) | ACGIH | ACGIH |
| | Standards Handbook | AMCA | AMCA 99-10 |
| | Air Systems | AMCA | AMCA 200-95 (R2011) |
| | Fans and Systems | AMCA | AMCA 201-02 (R2011) |
| | Troubleshooting | AMCA | AMCA 202-98 (R2011) |
| | Field Performance Measurement of Fan Systems | AMCA | AMCA 203-90 (R2011) |
| | Balance Quality and Vibration Levels for Fans | AMCA | ANSI/AMCA 204-05 (R2012) |
| | Laboratory Methods of Testing Air Circulator Fans for Rating and Certification | AMCA | ANSI/AMCA 230-12 |
| | Laboratory Method of Testing Positive Pressure Ventilators for Rating | AMCA | ANSI/AMCA 240-06 |
| | Reverberant Room Method for Sound Testing of Fans | AMCA | AMCA 300-08 |
| | Methods for Calculating Fan Sound Ratings from Laboratory Test Data | AMCA | AMCA 301-90 |
| | Application of Sone Ratings for Non-Ducted Air Moving Devices | AMCA | AMCA 302-73 (R2012) |
| | Application of Sound Power Level Ratings for Fans | AMCA | AMCA 303-79 (R2012) |
| | Recommended Safety Practices for Users and Installers of Industrial and Commercial Fans | AMCA | AMCA 410-96 |
| | Industrial Process/Power Generation Fans: Site Performance Test Standard | AMCA | AMCA 803-02 (R2008) |
| | Mechanical Balance of Fans and Blowers | AHRI | AHRI <i>Guideline</i> G-2011 |
| | Acoustics—Measurement of Airborne Noise Emitted and Structure-Borne Vibration Induced by Small Air-Moving Devices—Part 1: Airborne Noise Measurement | ASA | ANSI/ASA S12.11-2013-Part 1/ISO 103021:2013 |
| | Part 2: Structure-Borne Vibration | ASA | ANSI/ASA S12.11-2013-Part 2/ISO 10302-2:2013 |
| | Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating | ASHRAE/ AMCA | ANSI/ASHRAE 51-2007 ANSI/AMCA 210-07 |
| | Laboratory Method of Testing to Determine the Sound Power in a Duct | ASHRAE/ AMCA | ANSI/ASHRAE 68-1997 ANSI/AMCA 330-97 |

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| Subject | Title | Publisher | Reference |
|------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------|------------------------------|
| | Laboratory Methods of Testing Fans Used to Exhaust Smoke in Smoke Management Systems | ASHRAE | ANSI/ASHRAE 149-2013 |
| | Ventilation for Commercial Cooking Operations | ASHRAE | ANSI/ASHRAE 154-2011 |
| | Fans | ASME | ANSI/ASME PTC 11-2008 |
| | Fans and Ventilators | CSA | C22.2 No. 113-12 |
| | Energy Performance of Ceiling Fans | CSA | CAN/CSA-C814-10 |
| | Residential Mechanical Ventilating Systems | CSA | CAN/CSA-F326-M91 (R2010) |
| | Electric Fans | UL | ANSI/UL 507-1999 |
| | Power Ventilators | UL | ANSI/UL 705-2004 |
| Fenestration | Practice for Calculation of Photometric Transmittance and Reflectance of Materials to Solar Radiation | ASTM | ASTM E971-11 |
| | Test Method for Solar Photometric Transmittance of Sheet Materials Using Sunlight | ASTM | ASTM E972-96 (2013) |
| | Test Method for Solar Transmittance (Terrestrial) of Sheet Materials Using Sunlight | ASTM | ASTM E1084-86 (2009) |
| | Practice for Determining Load Resistance of Glass in Buildings | ASTM | ASTM E1300-12ae1 |
| | Practice for Installation of Exterior Windows, Doors and Skylights | ASTM | ASTM E2112-07 |
| | Test Method for Insulating Glass Unit Performance | ASTM | ASTM E2188-10 |
| | Test Method for Testing Resistance to Fogging Insulating Glass Units | ASTM | ASTM E2189-10e1 |
| | Specification for Insulating Glass Unit Performance and Evaluation | ASTM | ASTM E2190-10 |
| | Guide for Assessing the Durability of Absorptive Electrochemical Coatings within Sealed Insulating Glass Units | ASTM | ASTM E2354-10 |
| | Tables for Reference Solar Spectral Irradiance: Direct Normal and Hemispherical on 37° Tilted Surface | ASTM | ASTM G173-03 (2012) |
| | Windows | CSA | CSA A440-00 (R2005) |
| | Fenestration Energy Performance | CSA | CSA A440.2-14 |
| | Window, Door, and Skylight Installation | CSA | CSA A440.4-07 (R2012) |
| Filter-Driers | Flow-Capacity Rating of Suction-Line Filters and Suction-Line Filter-Driers | AHRI | AHRI 731-2013 |
| | Method of Testing Liquid Line Filter-Drier Filtration Capability | ASHRAE | ANSI/ASHRAE 63.2-1996 (RA10) |
| | Method of Testing Flow Capacity of Suction Line Filters and Filter-Driers | ASHRAE | ANSI/ASHRAE 78-1985 (RA07) |
| Fireplaces | Factory-Built Fireplaces | UL | ANSI/UL 127-2011 |
| | Fireplace Stoves | UL | ANSI/UL 737-2011 |
| Fire Protection | Test Method for Surface Burning Characteristics of Building Materials | ASTM/NFPA | ASTM E84-14 |
| | Test Methods for Fire Test of Building Construction and Materials | ASTM | ASTM E119-14 |
| | Test Method for Room Fire Test of Wall and Ceiling Materials and Assemblies | ASTM | ASTM E2257-13a |
| | Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale Multi-Story Test Apparatus | ASTM | ASTM E2307-15 |
| | Guide for Laboratory Monitors | ASTM | ASTM E2335-12 |
| | Test Method for Fire Resistance Grease Duct Enclosure Systems | ASTM | ASTM E2336-14 |
| | Practice for Specimen Preparation and Mounting of Paper or Vinyl Wall Coverings to Assess Surface Burning Characteristics | ASTM | ASTM E2404-13e1 |
| | BOCA National Fire Prevention Code, 11th ed. (1999) | BOCA | BNFPC |
| | Uniform Fire Code | IFCI | UFC 1997 |
| | International Fire Code® (2015) | ICC | IFC |
| | International Mechanical Code® (2015) | ICC | IMC |
| | International Urban-Wildland Interface Code® (2012) | ICC | IUWIC |
| | Fire-Resistance Tests—Elements of Building Construction; Part 1: Gen. Requirements | ISO | ISO 834-1:1999 |
| | Fire-Resistance Tests—Door and Shutter Assemblies | ISO | ISO 3008:2007 |
| | Reaction to Fire Tests—Ignitability of Building Products Using a Radiant Heat Source | ISO | ISO 5657:1997 |
| | Fire Containment—Elements of Building Construction—Part 1: Ventilation Ducts | ISO | ISO 6944-1:2008 |
| | Fire Service Annunciator and Interface | NEMA | NEMA SB 30-2005 |
| | Fire Protection Handbook (2008) | NFPA | NFPA |
| | National Fire Codes® (issued annually) | NFPA | NFPA |
| | Fire Protection Guide to Hazardous Materials | NFPA | NFPA HAZ-2010 |
| | Fire Code | NFPA | NFPA 1-2015 |
| | Installation of Sprinkler Systems | NFPA | NFPA 13-2013 |
| | Flammable and Combustible Liquids Code | NFPA | NFPA 30-2015 |
| | Fire Protection for Laboratories Using Chemicals | NFPA | NFPA 45-2015 |
| | National Fire Alarm Code | NFPA | NFPA 72-2013 |
| | Fire Doors and Other Opening Protectives | NFPA | NFPA 80-2013 |
| | Health Care Facilities | NFPA | NFPA 99-2015 |
| | Life Safety Code® | NFPA | NFPA 101-2015 |
| | Methods of Fire Tests of Door Assemblies | NFPA | NFPA 252-2012 |
| | Fire, Smoke and Radiation Damper Installation Guide for HVAC Systems, 5th ed. | SMACNA | SMACNA 2002 |
| | Fire Tests of Door Assemblies | UL | ANSI/UL 10B-2008 |

Selected Codes and Standards Published by Various Societies and Associations (Continued)

| Subject | Title | Publisher | Reference |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------|
| | Heat Responsive Links for Fire-Protection Service | UL | ANSI/UL 33-2010 |
| | Fire Tests of Building Construction and Materials | UL | ANSI/UL 263-2011 |
| | Fire Dampers | UL | ANSI/UL 555-2006 |
| | Fire Tests of Through-Penetration Firestops | UL | ANSI/UL 1479-2003 |
| Smoke Management | The Commissioning Process for Smoke Control Systems | ASHRAE | ASHRAE <i>Guideline</i> 1.5-2012 |
| | Laboratory Methods of Testing Fans Used to Exhaust Smoke in Smoke Management Systems | ASHRAE | ANSI/ASHRAE 149-2013 |
| | Smoke-Control Systems Utilizing Barriers and Pressure Differences | NFPA | NFPA 92A-2009 |
| | Smoke Management Systems in Malls, Atria, and Large Spaces | NFPA | NFPA 92B-2009 |
| | Ceiling Dampers | UL | ANSI/UL 555C-2014 |
| | Smoke Dampers | UL | ANSI/UL 555S-2014 |
| | | | |
| Freezers | Energy Performance and Capacity of Household Refrigerators, Refrigerator-Freezers, Freezers, and Wine Chillers | CSA | C300-12 |
| | Energy Performance of Food Service Refrigerators and Freezers | CSA | C827-10 |
| Commercial | Refrigeration Equipment | CSA | CAN/CSA-C22.2 No. 120-13 |
| | Dispensing Freezers | NSF | ANSI/NSF 6-2012 |
| | Commercial Refrigerators and Freezers | NSF | ANSI/NSF 7-2014 |
| | Commercial Refrigerators and Freezers | UL | ANSI/UL 471-2010 |
| | Ice Makers | UL | ANSI/UL 563-2009 |
| | Ice Cream Makers | UL | ANSI/UL 621-2010 |
| Household | Refrigerators, Refrigerator-Freezers and Freezers | AHAM | ANSI/AHAM HRF-1-2008 |
| | Household Refrigerators and Freezers | UL/CSA | ANSI/UL 250-1993/C22.2 No. 63-93 (R2013) |
| | | | |
| Fuels | Threshold Limit Values for Chemical Substances (updated annually) | ACGIH | ACGIH |
| | National Gas Fuel Code | NFPA | ANSI Z223.1/NFPA 54-2015 |
| | Reporting of Fuel Properties when Testing Diesel Engines with Alternative Fuels Derived from Plant Oils and Animal Fats | ASABE | ASABE EP552.1-2009 |
| | Coal Pulverizers | ASME | PTC 4.2 1969 (RA09) |
| | Classification of Coals by Rank | ASTM | ASTM D388-12 |
| | Specification for Fuel Oils | ASTM | ASTM D396-15 |
| | Specification for Diesel Fuel Oils | ASTM | ASTM D975-14b |
| | Specification for Gas Turbine Fuel Oils | ASTM | ASTM D2880-14a |
| | Specification for Kerosine | ASTM | ASTM D3699-13be1 |
| | Practice for Receipt, Storage and Handling of Fuels | ASTM | ASTM D4418-00 (2011) |
| | Test Method for Determination of Yield Stress and Apparent Viscosity of Used Engine Oils at Low Temperature | ASTM | ASTM D6896-14 |
| | Test Method for Total Sulfur in Naphthas, Distillates, Reformulated Gasolines, Diesels, Biodiesels, and Motor Fuels by Oxidative Combustion and Electrochemical Detection | ASTM | ASTM D6920-13 |
| | Test Method for Determination of Homogeneity and Miscibility in Automotive Engine Oils | ASTM | ASTM D6922-13 |
| | Test Method for Measurement of Hindered Phenolic and Aromatic Amine Antioxidant Content in Non-Zinc Turbine Oils by Linear Sweep Voltammetry | ASTM | ASTM D6971-09 (2014) |
| | Practice for Enumeration of Viable Bacteria and Fungi in Liquid Fuels—Filtration and Culture Procedures | ASTM | ASTM D6974-09 (2013)e2 |
| | Test Method for Evaluation of Automotive Engine Oils in the Sequence IIIF, Spark-Ignition Engine | ASTM | ASTM D6984-14a |
| | Test Method for Determination of Ignition Delay and Derived Cetane Number (DCN) of Diesel Fuel Oils by Combustion in a Constant Volume Chamber | ASTM | ASTM D6890-13be1 |
| | Test Method for Determination of Total Sulfur in Light Hydrocarbon, Motor Fuels, and Oils by Online Gas Chromatography with Flame Photometric Detection | ASTM | ASTM D7041-04 (2010)e1 |
| | Test Method for Sulfur in Gasoline, Diesel Fuel, Jet Fuel, Kerosine, Biodiesel, Biodiesel Blends, and Gasoline-Ethanol Blends by Monochromatic Wavelength Dispersive X-Ray Fluorescence Spectrometry | ASTM | ASTM D7039-13 |
| | Test Method for Flash Point by Modified Continuously Closed Cup (MCCCFP) Tester | ASTM | ASTM D7094-12e1 |
| | Test Method for Determining the Viscosity-Temperature Relationship of Used and Soot-Containing Engine Oils at Low Temperatures | ASTM | ASTM D7110-14 |
| | Test Method for Determination of Trace Elements in Middle Distillate Fuels by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES) | ASTM | ASTM D7111-14 |
| | Test Method for Determining Stability and Compatibility of Heavy Fuel Oils and Crude Oils by Heavy Fuel Oil Stability Analyzer (Optical Detection) | ASTM | ASTM D7112-12 |
| Test Method for Determination of Intrinsic Stability of Asphaltene-Containing Residues, Heavy Fuel Oils, and Crude Oils (<i>n</i> -Heptane Phase Separation; Optical Detection) | ASTM | ASTM D7157-12 | |

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| Subject | Title | Publisher | Reference |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------------------|
| | Test Method for Hydrogen Content of Middle Distillate Petroleum Products by Low-Resolution Pulsed Nuclear Magnetic Resonance Spectroscopy | ASTM | ASTM D7171-05 (2011) |
| | Gas-Fired Central Furnaces | CSA | ANSI Z21.47-2012/CSA 2.3-2012 |
| | Gas Unit Heaters, Gas Packaged Heaters, Gas Utility Heaters and Gas-Fired Duct Furnaces | CSA | ANSI Z83.8-2013/CSA-2.6-2013 |
| | Industrial and Commercial Gas-Fired Package Furnaces | CSA | CGA 3.2-1976 (R2009) |
| | Uniform Mechanical Code (2012) | IAPMO | Chapter 13 |
| | Uniform Plumbing Code (2012) | IAPMO | Chapter 12 |
| | International Fuel Gas Code® (2015) | ICC | IFGC |
| | Standard Gas Code (1999) | SBCCI | SGC |
| | Commercial-Industrial Gas Heating Equipment (2011) | UL | UL 795-2011 |
| Furnaces | Commercial Systems Overview | ACCA | ACCA Manual CS |
| | Residential Equipment Selection, 2nd ed. | ACCA | ANSI/ACCA Manual S |
| | Method of Testing for Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers | ASHRAE | ANSI/ASHRAE 103-2007 |
| | Prevention of Furnace Explosions/Implosions in Multiple Burner Boilers | NFPA | NFPA 8502-99 |
| | Residential Gas Detectors | UL | ANSI/UL 1484-2000 |
| | Heating and Cooling Equipment | UL/CSA | ANSI/UL 1995-2011/C22.2 No. 236-11 |
| | Single and Multiple Station Carbon Monoxide Alarms | UL | ANSI/UL 2034-2008 |
| Gas | National Fuel Gas Code | AGA/NFPA | ANSI Z223.1/NFPA 54-2015 |
| | Gas-Fired Central Furnaces | CSA | ANSI Z21.47-2012/CSA 2.3-2012 |
| | Gas Unit Heaters, Gas Packaged Heaters, Gas Utility Heaters and Gas-Fired Duct Furnaces | CSA | ANSI Z83.8-2013/CSA-2.6-2013 |
| | Industrial and Commercial Gas-Fired Package Furnaces | CSA | CGA 3.2-1976 (R2009) |
| | International Fuel Gas Code® (2015) | ICC | IFGC |
| | Standard Gas Code (1999) | SBCCI | SGC |
| | Commercial-Industrial Gas Heating Equipment | UL | UL 795-2011 |
| Oil | Specification for Fuel Oils | ASTM | ASTM D396-15 |
| | Specification for Diesel Fuel Oils | ASTM | ASTM D975-14b |
| | Test Method for Smoke Density in Flue Gases from Burning Distillate Fuels | ASTM | ASTM D2156-09 (2013) |
| | Standard Test Method for Vapor Pressure of Liquefied Petroleum Gases (LPG) (Expansion Method) | ASTM | ASTM D6897-09 |
| | Oil Burning Stoves and Water Heaters | CSA | B140.3-1962 (R2011) |
| | Oil-Fired Warm Air Furnaces | CSA | B140.4-04 (R2009) |
| | Installation of Oil-Burning Equipment | NFPA | NFPA 31-2011 |
| | Oil-Fired Central Furnaces | UL | UL 727-2006 |
| | Oil-Fired Floor Furnaces | UL | ANSI/UL 729-2003 |
| | Oil-Fired Wall Furnaces | UL | ANSI/UL 730-2003 |
| Solid Fuel | Installation Code for Solid-Fuel-Burning Appliances and Equipment | CSA | CSA B365-10 |
| | Solid-Fuel-Fired Central Heating Appliances | CSA | CAN/CSA-B366.1-11 |
| | Solid-Fuel and Combination-Fuel Central and Supplementary Furnaces | UL | ANSI/UL 391-2010 |
| Green Buildings | Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings | ASHRAE/USGBC | ANSI/ASHRAE/USGBC/IES 189.1-2014 |
| | International Green Construction Code™ (2012) | ICC | IGCC |
| | Building Systems Analysis and Retrofit Manual, 2nd ed. | SMACNA | SMACNA 2011 |
| Heaters | Gas-Fired High-Intensity Infrared Heaters | CSA | ANSI Z83.19-2009/CSA 2.35-2009 |
| | Gas-Fired Low-Intensity Infrared Heaters | CSA | ANSI Z83.20-2008/CSA 2.34-2008 (R2013) |
| | Threshold Limit Values for Chemical Substances (updated annually) | ACGIH | ACGIH |
| | Industrial Ventilation: A Manual of Recommended Practice, 28th ed. (2013) | ACGIH | ACGIH |
| | Thermal Performance Testing of Solar Ambient Air Heaters | ASABE | ANSI/ASAE S423-1991 (R2012) |
| | Air Heaters | ASME | ASME PTC 4.3-1968 (RA91) |
| | Guide for Construction of Solid Fuel Burning Masonry Heaters | ASTM | ASTM E1602-03 (2010)e1 |
| | Non-Recirculating Direct Gas-Fired Industrial Air Heaters | CSA | ANSI Z83.4-2013/CSA 3.7-2013 |
| | Electric Duct Heaters | CSA | C22.2 No. 155-M1986 (R2013) |
| | Portable Kerosene-Fired Heaters | CSA | CAN3-B140.9.3-M86 (R2011) |
| | Standards for Closed Feedwater Heaters, 8th ed. (2009) | HEI | HEI 2622 |
| | Electric Heating Appliances | UL | ANSI/UL 499-2014 |
| | Electric Oil Heaters | UL | ANSI/UL 574-2003 |
| | Oil-Fired Air Heaters and Direct-Fired Heaters | UL | UL 733-1993 |
| | Electric Dry Bath Heaters | UL | ANSI/UL 875-2009 |
| | Oil-Burning Stoves | UL | ANSI/UL 896-1993 |

Selected Codes and Standards Published by Various Societies and Associations (Continued)

| Subject | Title | Publisher | Reference |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------|
| Engine | Electric Engine Preheaters and Battery Warmers for Diesel Engines | SAE | SAE J1310-2011 |
| | Selection and Application Guidelines for Diesel, Gasoline, and Propane Fired Liquid Cooled Engine Pre-Heaters | SAE | SAE J1350-2011 |
| | Fuel Warmer—Diesel Engines | SAE | SAE J1422-2011 |
| Nonresidential | Installation of Electric Infrared Brooding Equipment | ASABE | ASAE EP258.4-2014 |
| | Gas-Fired Construction Heaters | CSA | ANSI Z83.7-2011/CSA 2.14-2011 |
| | Recirculating Direct Gas-Fired Industrial Air Heaters | CSA | ANSI Z83.18-2015 |
| | Portable Industrial Oil-Fired Heaters | CSA | B140.8-1967 (R2011) |
| | Fuel-Fired Heaters—Air Heating—for Construction and Industrial Machinery | SAE | SAE J1024-2011 |
| | Commercial-Industrial Gas Heating Equipment | UL | UL 795-2011 |
| | Electric Heaters for Use in Hazardous (Classified) Locations | UL | ANSI/UL 823-2006 |
| Pool | Methods of Testing and Rating Pool Heaters | ASHRAE | ANSI/ASHRAE 146-2011 |
| | Gas-Fired Pool Heaters | CSA | ANSI Z21.56-2014/CSA 4.7-2014 |
| | Oil-Fired Service Water Heaters and Swimming Pool Heaters | CSA | B140.12-03 (R2013) |
| Room | Specification for Room Heaters, Pellet Fuel-Burning Type | ASTM | ASTM E1509-12 |
| | Gas-Fired Room Heaters, Vol. II, Unvented Room Heaters | CSA | ANSI Z21.11.2-2013 |
| | Gas-Fired Unvented Catalytic Room Heaters for Use with Liquefied Petroleum (LP) Gases | CSA | ANSI Z21.76-1994 (R2006) |
| | Vented Gas-Fired Space Heating Appliances | CSA | ANSI Z21.86-2008/CSA 2.32-2008 (R2014) |
| | Vented Gas Fireplace Heaters | CSA | ANSI Z21.88-2014/CSA 2.33-2014 |
| | Unvented Kerosene-Fired Room Heaters and Portable Heaters | UL | UL 647-1993 |
| | Movable and Wall- or Ceiling-Hung Electric Room Heaters | UL | UL 1278-2014 |
| | Fixed and Location-Dedicated Electric Room Heaters | UL | UL 2021-2013 |
| | Solid Fuel-Type Room Heaters | UL | ANSI/UL 1482-2011 |
| | Transport | Heater, Airplane, Engine Exhaust Gas to Air Heat Exchanger Type | SAE |
| Heater, Aircraft Internal Combustion Heat Exchanger Type | | SAE | SAE AS8040B-2013 |
| Unit | Motor Vehicle Heater Test Procedure | SAE | SAE J638-2011 |
| | Gas Unit Heaters, Gas Packaged Heaters, Gas Utility Heaters and Gas-Fired Duct Furnaces | CSA | ANSI Z83.8-2013/CSA-2.6-2013 |
| | Oil-Fired Unit Heaters | UL | ANSI/UL 731-1995 |
| Heat Exchangers | Remote Mechanical-Draft Evaporative Refrigerant Condensers | AHRI | ANSI/AHRI 491-2011 |
| | Method of Testing Air-to-Air Heat/Energy Exchangers | ASHRAE | ANSI/ASHRAE 84-2013 |
| | Boiler and Pressure Vessel Code—Section VIII, Division 1: Pressure Vessels | ASME | ASME BPVC-2015 |
| | Single Phase Heat Exchangers | ASME | ASME PTC 12.5-2000 (RA05) |
| | Air Cooled Heat Exchangers | ASME | ASME PTC 30-1991 (RA11) |
| | Laboratory Methods of Test for Rating the Performance of Heat/Energy-Recovery Ventilators | CSA | C439-09 (R2014) |
| | Standards for Gasketed Plate Heat Exchangers, 1st ed. | HEI | HEI |
| | Standards for Shell and Tube Heat Exchangers, 5th ed. (2013) | HEI | HEI 2623 |
| | Standards of Tubular Exchanger Manufacturers Association, 9th ed. (2007) | TEMA | TEMA |
| Refrigerant-Containing Components and Accessories, Nonelectrical | UL | ANSI/UL 207-2009 | |
| Heating | Commercial Systems Overview | ACCA | ACCA Manual CS |
| | Comfort, Air Quality, and Efficiency by Design | ACCA | ACCA Manual RS |
| | Residential Equipment Selection, 2nd ed. | ACCA | ANSI/ACCA Manual S |
| | Heating, Ventilating and Cooling Greenhouses | ASABE | ANSI/ASAE EP406.4-2003 (R2008) |
| | Peak Cooling and Heating Load Calculations in Buildings Except Low-Rise Residential Buildings | ASHRAE/ ACCA | ANSI/ASHRAE/ACCA 183-2007 (RA14) |
| | Heater Elements | CSA | C22.2 No. 72-10 (R2014) |
| | Determining the Required Capacity of Residential Space Heating and Cooling Appliances | CSA | CAN/CSA-F280-12 |
| | Heat Loss Calculation Guide (2001) | HYDI | HYDI H-22 |
| | Residential Hydronic Heating Installation Design Guide | HYDI | IBR Guide |
| | Radiant Floor Heating (1995) | HYDI | HYDI 004 |
| | Advanced Installation Guide (Commercial) for Hot Water Heating Systems (2001) | HYDI | HYDI 250 |
| | Environmental Systems Technology, 2nd ed. (1999) | NEBB | NEBB |
| | Pulverized Fuel Systems | NFPA | NFPA 8503-97 |
| | Aircraft Electrical Heating Systems | SAE | SAE AIR860B-2011 |
| | Heating Value of Fuels | SAE | SAE J1498-2011 |
| | Performance Test for Air-Conditioned, Heated, and Ventilated Off-Road Self-Propelled Work Machines | SAE | SAE J1503-2004 |
| | HVAC Systems Applications, 2nd ed. | SMACNA | SMACNA 2010 |
| | Electric Baseboard Heating Equipment | UL | ANSI/UL 1042-2009 |
| | Electric Duct Heaters | UL | ANSI/UL 1996-2009 |

Selected Codes and Standards Published by Various Societies and Associations (Continued)

| Subject | Title | Publisher | Reference |
|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------------|
| | Heating and Cooling Equipment | UL/CSA | ANSI/UL 1995-2011/C22.2 No. 236-11 |
| Heat Pumps | Commercial Systems Overview | ACCA | ACCA Manual CS |
| | Geothermal Heat Pump Training Certification Program | ACCA | ACCA Training Manual |
| | Heat Pumps Systems, Principles and Applications, 2nd ed. | ACCA | ACCA Manual H |
| | Residential Equipment Selection, 2nd ed. | ACCA | ANSI/ACCA Manual S |
| | Industrial Ventilation: A Manual of Recommended Practice, 28th ed. (2013) | ACGIH | ACGIH |
| | Performance Rating of Unitary Air-Conditioning and Air-Source Heat Pump Equipment | AHRI | ANSI/AHRI 210/240-2008 |
| | Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment | AHRI | ANSI/AHRI 340/360-2007 |
| | Single Package Vertical Air-Conditioner and Heat Pumps | AHRI | ANSI/AHRI 390-2003 |
| | Direct Geexchange Heat Pumps | AHRI | ANSI/AHRI 870-2005 |
| | Variable Refrigerant Flow (VRF) Multi-Split Air-Conditioning and Heat Pump Equipment | AHRI | ANSI/AHRI 1230-2010 |
| | Methods of Testing for Rating Electrically Driven Unitary Air-Conditioning and Heat Pump Equipment | ASHRAE | ANSI/ASHRAE 37-2009 |
| | Methods of Testing for Rating Seasonal Efficiency of Unitary Air-Conditioners and Heat Pumps | ASHRAE | ANSI/ASHRAE 116-2010 |
| | Method of Test for Direct-Expansion Ground Source Heat Pumps | ASHRAE | ANSI/ASHRAE 194-2012 |
| | Method of Testing for Rating of Multi-Purpose Heat Pumps for Residential Space Conditioning and Water Heating | ASHRAE | ANSI/ASHRAE 206-2013 |
| | Performance Standard for Split-System and Single-Package Central Air Conditioners and Heat Pumps | CSA | CAN/CSA-C656-14 |
| | Installation of Air-Source Heat Pumps and Air Conditioners | CSA | CAN/CSA-C273.5-11 |
| | Performance of Direct-Expansion (DX) Ground-Source Heat Pumps | CSA | C748-13 |
| Water-Source Heat Pumps—Testing and Rating for Performance, Part 1: Water-to-Air and Brine-to-Air Heat Pumps | CSA | CAN/CSA-C13256-1-01 (R2011) | |
| Part 2: Water-to-Water and Brine-to-Water Heat Pumps | CSA | CAN/CSA-C13256-2-01 (R2010) | |
| Heating and Cooling Equipment (2011) | UL/CSA | ANSI/UL 1995/C22.2 No. 236-11 | |
| Gas-Fired | Gas-Fired, Heat Activated Air Conditioning and Heat Pump Appliances | CSA | ANSI Z21.40.1-1996/CGA 2.91-M96 (R2012) |
| | Gas-Fired, Work Activated Air Conditioning and Heat Pump Appliances (Internal Combustion) | CSA | ANSI Z21.40.2-1996/CGA 2.92-M96 (R2002) |
| | Performance Testing and Rating of Gas-Fired Air Conditioning and Heat Pump Appliances | CSA | ANSI Z21.40.4-1996/CGA 2.94-M96 (R2002) |
| Heat Recovery | Gas Turbine Heat Recovery Steam Generators | ASME | ANSI/ASME PTC 4.4-2008 |
| | Water Heaters, Hot Water Supply Boilers, and Heat Recovery Equipment | NSF | ANSI/NSF 5-2012 |
| High-Performance Buildings | Sustainable, High Performance Operations and Maintenance | ASHRAE | ASHRAE <i>Guideline</i> 32-2012 |
| | Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings | ASHRAE/ USGBC | ANSI/ASHRAE/USGBC/IES 189.1-2014 |
| | International Green Construction Code™ (2012) | ICC | IGCC |
| Humidifiers | Commercial Systems Overview | ACCA | ACCA Manual CS |
| | Comfort, Air Quality, and Efficiency by Design | ACCA | ACCA Manual RS |
| | Bioaerosols: Assessment and Control (1999) | ACGIH | ACGIH |
| | Humidifiers | AHAM | ANSI/AHAM HU-1-2006 (R2011) |
| | Central System Humidifiers for Residential Applications | AHRI | ANSI/AHRI 610-2014 |
| | Self-Contained Humidifiers for Residential Applications | AHRI | ANSI/AHRI 620-2014 |
| | Commercial and Industrial Humidifiers | AHRI | ANSI/AHRI 640-2005 |
| | Method of Test for Residential Central-System Humidifiers | ASHRAE | ANSI/ASHRAE 164.1-2012 |
| Humidifiers | UL/CSA | ANSI/UL 998-2011/C22.2 No. 104-11 | |
| HVAC Load Calculations | Peak Cooling and Heating Load Calculations in Buildings Except Low-Rise Residential Buildings | ASHRAE/ ACCA | ANSI/ASHRAE/ACCA 183-2007 (RA14) |
| Ice Makers | Performance Rating of Automatic Commercial Ice Makers | AHRI | ANSI/AHRI 811-2012 |
| | Ice Storage Bins | AHRI | ANSI/AHRI 821-2012 |
| | Methods of Testing Automatic Ice Makers | ASHRAE | ANSI/ASHRAE 29-2009 |
| | Refrigeration Equipment | CSA | C22.2 No. 120-13 |
| | Energy Performance of Automatic Icemakers and Ice Storage Bins | CSA | CAN/CSA-C742-08 (R2014) |
| | Automatic Ice Making Equipment | NSF | ANSI/NSF 12-2012 |
| | Ice Makers | UL | ANSI/UL 563-2009 |
| Incinerators | Incinerators and Waste and Linen Handling Systems and Equipment | NFPA | NFPA 82-2014 |
| | Residential Incinerators | UL | UL 791-2006 |

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| Subject | Title | Publisher | Reference |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------------------|
| Indoor Air Quality | Good HVAC Practices for Residential and Commercial Buildings (2003) | ACCA | ACCA |
| | Comfort, Air Quality, and Efficiency by Design | ACCA | ACCA Manual RS |
| | Bioaerosols: Assessment and Control (1999) | ACGIH | ACGIH |
| | Interactions Affecting the Achievement of Acceptable Indoor Environments | ASHRAE | ASHRAE <i>Guideline</i> 10-2011 |
| | Ventilation for Acceptable Indoor Air Quality | ASHRAE | ANSI/ASHRAE 62.1-2013 |
| | Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings | ASHRAE | ANSI/ASHRAE 62.2-2013 |
| | Test Method for Determination of Volatile Organic Chemicals in Atmospheres (Canister Sampling Methodology) | ASTM | ASTM D5466-01 (2007) |
| | Guide for Using Probability Sampling Methods in Studies of Indoor Air Quality in Buildings | ASTM | ASTM D5791-95 (2012)e1 |
| | Guide for Using Indoor Carbon Dioxide Concentrations to Evaluate Indoor Air Quality and Ventilation | ASTM | ASTM D6245-12 |
| | Guide for Placement and Use of Diffusion Controlled Passive Monitors for Gaseous Pollutants in Indoor Air | ASTM | ASTM D6306-10 |
| | Test Method for Determination of Metals and Metalloids Airborne Particulate Matter by Inductively Coupled Plasma Atomic Emissions Spectrometry (ICP-AES) | ASTM | ASTM D7035-10 |
| | Test Method for Metal Removal Fluid Aerosol in Workplace Atmospheres | ASTM | ASTM D7049-04 (2010) |
| | Practice for Emission Cells for the Determination of Volatile Organic Emissions from Materials/Products | ASTM | ASTM D7143-11 |
| | Practice for Collection of Surface Dust by Micro-Vacuum Sampling for Subsequent Metals Determination | ASTM | ASTM D7144-05a (2011) |
| | Test Method for Determination of Beryllium in the Workplace Using Field-Based Extraction and Optical Fluorescence Detection | ASTM | ASTM D7202-14e1 |
| | Practice for Referencing Suprathreshold Odor Intensity | ASTM | ASTM E544-10 |
| | Guide for Specifying and Evaluating Performance of a Single Family Attached and Detached Dwelling—Indoor Air Quality | ASTM | ASTM E2267-04 (2013) |
| | Classification for Serviceability of an Office Facility for Thermal Environment and Indoor Air Conditions | ASTM | ASTM E2320-04 (2012) |
| | Practice for Continuous Sizing and Counting of Airborne Particles in Dust-Controlled Areas and Clean Rooms Using Instruments Capable of Detecting Single Sub-Micrometre and Larger Particles | ASTM | ASTM F50-12 |
| | Ambient Air—Determination of Mass Concentration of Nitrogen Dioxide—Modified Griess-Saltzman Method | ISO | ISO 6768:1998 |
| | Air Quality—Exchange of Data—Part 1: General Data Format | ISO | ISO 7168-1:1999 |
| | Part 2: Condensed Data Format | ISO | ISO 7168-2:1999 |
| | Environmental Tobacco Smoke—Estimation of Its Contribution to Respirable Suspended Particles—Determination of Particulate Matter by Ultraviolet Absorbance and by Fluorescence | ISO | ISO 15593:2001 |
| | Indoor Air—Part 3: Determination of Formaldehyde and Other Carbonyl Compounds in Indoor Air and Test Chamber Air—Active Sampling Method | ISO | ISO 16000-3:2011 |
| | Workplace Air Quality—Sampling and Analysis of Volatile Organic Compounds by Solvent Desorption/Gas Chromatography—Part 1: Pumped Sampling Method | ISO | ISO 16200-1:2001 |
| | Part 2: Diffusive Sampling Method | ISO | ISO 16200-2:2000 |
| Workplace Air Quality—Determination of Total Organic Isocyanate Groups in Air Using 1-(2-Methoxyphenyl) Piperazine and Liquid Chromatography | ISO | ISO 16702:2007 | |
| Installation of Carbon Monoxide (CO) Detection and Warning Equipment | NFPA | NFPA 720-2015 | |
| Indoor Air Quality—A Systems Approach, 3rd ed. | SMACNA | SMACNA 1998 | |
| IAQ Guidelines for Occupied Buildings Under Construction, 2nd ed. | SMACNA | ANSI/SMACNA 008-2007 | |
| Single and Multiple Station Carbon Monoxide Alarms | UL | ANSI/UL 2034-2008 | |
| Aircraft | Air Quality Within Commercial Aircraft | ASHRAE | ASHRAE <i>Guideline</i> 28-2012 |
| | Air Quality Within Commercial Aircraft | ASHRAE | ANSI/ASHRAE 161-2013 |
| | Guide for Selecting Instruments and Methods for Measuring Air Quality in Aircraft Cabins | ASTM | ASTM D6399-10 |
| | Guide for Deriving Acceptable Levels of Airborne Chemical Contaminants in Aircraft Cabins Based on Health and Comfort Considerations | ASTM | ASTM D7034-11 |
| Modeling | Guideline for Documenting Indoor Airflow and Contaminant Transport Modeling | ASHRAE | ASHRAE <i>Guideline</i> 33-2013 |
| Insulation | Guidelines for Use of Thermal Insulation in Agricultural Buildings | ASABE | ANSI/ASAE S401.2-1993 (R2012) |
| | Terminology Relating to Thermal Insulating Materials | ASTM | ASTM C168-13 |
| | Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus | ASTM | ASTM C177-13 |
| | Test Method for Steady-State Heat Transfer Properties of Pipe Insulations | ASTM | ASTM C335/C335M-10e1 |
| | Practice for Fabrication of Thermal Insulating Fitting Covers for NPS Piping and Vessel Lagging | ASTM | ASTM C450-08 (2014) |
| | Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus | ASTM | ASTM C518-10 |

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| Subject | Title | Publisher | Reference |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------------------------------|
| | Specification for Preformed Flexible Elastometric Cellular Thermal Insulation in Sheet and Tubular Form | ASTM | ASTM C534/C534M-14 |
| | Specification for Cellular Glass Thermal Insulation | ASTM | ASTM C552-14 |
| | Specification for Rigid, Cellular Polystyrene Thermal Insulation | ASTM | ASTM C578-14a |
| | Practice for Inner and Outer Diameters of Thermal Insulation for Nominal Sizes of Pipe and Tubing | ASTM | ASTM C585-10 |
| | Specification for Unfaced Preformed Rigid Cellular Polyisocyanurate Thermal Insulation | ASTM | ASTM C591-13 |
| | Practice for Estimate of the Heat Gain or Loss and the Surface Temperatures of Insulated Flat, Cylindrical, and Spherical Systems by Use of Computer Programs | ASTM | ASTM C680-14 |
| | Specification for Adhesives for Duct Thermal Insulation | ASTM | ASTM C916-14 |
| | Classification of Potential Health and Safety Concerns Associated with Thermal Insulation Materials and Accessories | ASTM | ASTM C930-12 |
| | Practice for Thermographic Inspection of Insulation Installations in Envelope Cavities of Frame Buildings | ASTM | ASTM C1060-11a |
| | Specification for Fibrous Glass Duct Lining Insulation (Thermal and Sound Absorbing Material) | ASTM | ASTM C1071-12 |
| | Specification for Faced or Unfaced Rigid Cellular Phenolic Thermal Insulation | ASTM | ASTM C1126-14 |
| | Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus | ASTM | ASTM C1363-11 |
| | Specification for Perpendicularly Oriented Mineral Fiber Roll and Sheet Thermal Insulation for Pipes and Tanks | ASTM | ASTM C1393-14 |
| | Guide for Measuring and Estimating Quantities of Insulated Piping and Components | ASTM | ASTM C1409-12 |
| | Specification for Cellular Melamine Thermal and Sound-Absorbing Insulation | ASTM | ASTM C1410-14 |
| | Guide for Selecting Jacketing Materials for Thermal Insulation | ASTM | ASTM C1423-14 |
| | Specification for Preformed Flexible Cellular Polyolefin Thermal Insulation in Sheet and Tubular Form | ASTM | ASTM C1427-13 |
| | Specification for Polyimide Flexible Cellular Thermal and Sound Absorbing Insulation | ASTM | ASTM C1482-12 |
| | Specification for Cellulosic Fiber Stabilized Thermal Insulation | ASTM | ASTM C1497-12 |
| | Test Method for Characterizing the Effect of Exposure to Environmental Cycling on Thermal Performance of Insulation Products | ASTM | ASTM C1512-10 |
| | Specification for Flexible Polymeric Foam Sheet Insulation Used as a Thermal and Sound Absorbing Liner for Duct Systems | ASTM | ASTM C1534-14 |
| | Standard Guide for Development of Standard Data Records for Computerization of Thermal Transmission Test Data for Thermal Insulation | ASTM | ASTM C1558-12 |
| | Guide for Determining Blown Density of Pneumatically Applied Loose Fill Mineral Fiber Thermal Insulation | ASTM | ASTM C1574-04 (2013) |
| | Test Method for Determining the Moisture Content of Organic and Inorganic Insulation Materials by Weight | ASTM | ASTM C1616-07 (2012) |
| | Classification for Rating Sound Insulation | ASTM | ASTM E413-10 |
| | Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies | ASTM | ASTM E2273-03 (2011) |
| | Practice for Use of Test Methods E96/E96M for Determining the Water Vapor Transmission (WVT) of Exterior Insulation and Finish Systems | ASTM | ASTM E2321-03 (2011) |
| | Thermal Insulation—Vocabulary | ISO | ISO 9229:2007 |
| | National Commercial and Industrial Insulation Standards, 7th ed. | MICA | MICA |
| | Accepted Industry Practices for Sheet Metal Lagging, 1st ed. | SMACNA | SMACNA 2002 |
| Legionellosis | Minimizing the Risk of Legionellosis Associated with Building Water Systems | ASHRAE | ASHRAE <i>Guideline</i> 12-2000 |
| Louvers | Laboratory Methods of Testing Dampers for Rating | AMCA | AMCA 500-D-12 |
| | Laboratory Methods of Testing Louvers for Rating | AMCA | AMCA 500-L-12 |
| Lubricants | Methods of Testing the Floc Point of Refrigeration Grade Oils | ASHRAE | ANSI/ASHRAE 86-2013 |
| | Refrigeration Oil Description | ASHRAE | ANSI/ASHRAE 99-2006 |
| | Test Method for Pour Point of Petroleum Products | ASTM | ASTM D97-12 |
| | Classification of Industrial Fluid Lubricants by Viscosity System | ASTM | ASTM D2422-97 (2013) |
| | Test Method for Relative Molecular Weight (Relative Molecular Mass) of Hydrocarbons by Thermoelectric Measurement of Vapor Pressure | ASTM | ASTM D2503-92 (2012) |
| | Test Method for Determination of Moderately High Temperature Piston Deposits by Thermo-Oxidation Engine Oil Simulation Test—TEOST MHT | ASTM | ASTM D7097-09 |
| | Petroleum Products—Corrosiveness to Copper—Copper Strip Test | ISO | ISO 2160:1998 |
| Measurement | Industrial Ventilation: A Manual of Recommended Practice, 28th ed. (2013) | ACGIH | ACGIH |
| | Engineering Analysis of Experimental Data | ASHRAE | ASHRAE <i>Guideline</i> 2-2010 (RA14) |
| | Instrumentation for Monitoring Central Chilled Water Plant Efficiency | ASHRAE | ASHRAE <i>Guideline</i> 22-2012 |
| | Standard Method for Measurement of Proportion of Lubricant in Liquid Refrigerant | ASHRAE | ANSI/ASHRAE 41.4-1996 (RA06) |
| | Standard Method for Measurement of Moist Air Properties | ASHRAE | ANSI/ASHRAE 41.6-2014 |

Selected Codes and Standards Published by Various Societies and Associations (Continued)

| Subject | Title | Publisher | Reference |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------------------------|
| | Method of Measuring Solar-Optical Properties of Materials | ASHRAE | ANSI/ASHRAE 74-1988 |
| | Methods of Determining, Expressing, and Comparing Building Energy Performance and Greenhouse Gas Emissions | ASHRAE | ANSI/ASHRAE 105-2014 |
| | Method for Establishing Installation Effects on Flowmeters | ASME | ASME MFC-10M-2000 (RA11) |
| | Test Uncertainty | ASME | ASME PTC 19.1-2013 |
| | Measurement of Industrial Sound | ASME | ANSI/ASME PTC 36-2004 (RA13) |
| | Test Methods for Water Vapor Transmission of Materials | ASTM | ASTM E96/E96M-14 |
| | Specification and Temperature-Electromotive Force (EMF) Tables for Standardized Thermocouples | ASTM | ASTM E230/E230M-12 |
| | Practice for Continuous Sizing and Counting of Airborne Particles in Dust-Controlled Areas and Clean Rooms Using Instruments Capable of Detecting Single Sub-Micrometre and Larger Particles | ASTM | ASTM F50-12 |
| | Ergonomics of the Thermal Environment—Instruments for Measuring Physical Quantities | ISO | ISO 7726:1998 |
| | Ergonomics of the Thermal Environment—Determination of Metabolic Rate | ISO | ISO 8996:2004 |
| | Ergonomics of the Thermal Environment—Estimation of the Thermal Insulation and Water Vapour Resistance of a Clothing Ensemble | ISO | ISO 9920:2007 |
| Energy | Measurement of Energy and Demand Savings | ASHRAE | ASHRAE <i>Guideline</i> 14-2002 |
| Fluid Flow | Standard Methods of Measurement of Flow of Liquids in Pipes Using Orifice Flowmeters | ASHRAE | ANSI/ASHRAE 41.8-1989 |
| | Methods for Volatile-Refrigerant Mass Flow Measurements Using Calorimeters | ASHRAE | ANSI/ASHRAE 41.9-2011 |
| | Flow Measurement | ASME | ASME PTC 19.5-2004 (RA13) |
| | Glossary of Terms Used in the Measurement of Fluid Flow in Pipes | ASME | ASME MFC-1M-2003 (RA08) |
| | Measurement Uncertainty for Fluid Flow in Closed Conduits | ASME | ANSI/ASME MFC-2M-1983 (RA13) |
| | Measurement of Fluid Flow in Pipes Using Orifice, Nozzle, and Venturi | ASME | ASME MFC-3M-2004 |
| | Measurement of Fluid Flow in Pipes Using Vortex Flowmeters | ASME | ASME MFC-6M-1998 (RA05) |
| | Fluid Flow in Closed Conduits: Connections for Pressure Signal Transmissions Between Primary and Secondary Devices | ASME | ASME MFC-8M-2001 (RA11) |
| | Measurement of Liquid Flow in Closed Conduits by Weighing Method | ASME | ASME MFC-9M-1988 (RA11) |
| | Measurement of Fluid Flow Using Small Bore Precision Orifice Meters | ASME | ASME MFC-14M-2003 (RA08) |
| | Measurement of Fluid Flow in Closed Conduits by Means of Electromagnetic Flowmeters | ASME | ASME MFC-16-2014 |
| | Measurement of Fluid Flow Using Variable Area Meters | ASME | ASME MFC-18M-2001 (RA11) |
| | Test Method for Determining the Moisture Content of Inorganic Insulation Materials by Weight | ASTM | ASTM C1616-07 (2012) |
| | Test Method for Indicating Wear Characteristics of Petroleum Hydraulic Fluids in a High Pressure Constant Volume Vane Pump | ASTM | ASTM D6973-14 |
| | Test Method for Dynamic Viscosity and Density of Liquids by Stabinger Viscometer (and the Calculation of Kinematic Viscosity) | ASTM | ASTM D7042-14 |
| | Test Method for Indicating Wear Characteristics of Non-Petroleum and Petroleum Hydraulic Fluids in a Constant Volume Vane Pump | ASTM | ASTM D7043-12 |
| | Practice for Calculating Viscosity of a Blend of Petroleum Products | ASTM | ASTM D7152-11 |
| | Test Method for Same-Different Test | ASTM | ASTM E2139-05 (2011) |
| Gas Flow | Practice for Field Use of Pyranometers, Pyrheliometers, and UV Radiometers | ASTM | ASTM G183-15 |
| | Standard Methods for Laboratory Airflow Measurement | ASHRAE | ANSI/ASHRAE 41.2-1987 (RA92) |
| | Method of Test for Measurement of Flow of Gas | ASHRAE | ANSI/ASHRAE 41.7-1984 (RA06) |
| | Measurement of Gas Flow by Turbine Meters | ASME | ANSI/ASME MFC-4M-1986 (RA08) |
| | Measurement of Gas Flow by Means of Critical Flow Venturi Nozzles | ASME | ANSI/ASME MFC-7M-1987 (RA14) |
| Pressure | Standard Method for Pressure Measurement | ASHRAE | ANSI/ASHRAE 41.3-2014 |
| | Pressure Gauges and Gauge Attachments | ASME | ASME B40.100-2013 |
| | Pressure Measurement | ASME | ANSI/ASME PTC 19.2-2010 |
| Temperature | Standard Method for Temperature Measurement | ASHRAE | ANSI/ASHRAE 41.1-2013 |
| | Thermometers, Direct Reading and Remote Reading | ASME | ASME B40.200-2008 (RA13) |
| | Temperature Measurement | ASME | ASME PTC 19.3-1974 (RA04) |
| | Total Temperature Measuring Instruments (Turbine Powered Subsonic Aircraft) | SAE | SAE AS793A-2001 (R2008) |
| Thermal | Method of Testing Thermal Energy Meters for Liquid Streams in HVAC Systems | ASHRAE | ANSI/ASHRAE 125-1992 (RA11) |
| | Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus | ASTM | ASTM C177-13 |
| | Test Method for Steady-State Heat Flux Measurements Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus | ASTM | ASTM C518-10 |
| | Practice for In-Situ Measurement of Heat Flux and Temperature on Building Envelope Components | ASTM | ASTM C1046-95 (2013) |
| | Practice for Determining Thermal Resistance of Building Envelope Components from In-Situ Data | ASTM | ASTM C1155-95 (2013) |

Selected Codes and Standards Published by Various Societies and Associations (Continued)

| Subject | Title | Publisher | Reference |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------------------------|
| | Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus | ASTM | ASTM C1363-11 |
| Mobile Homes and Recreational Vehicles | Residential Load Calculation, 8th ed. | ACCA | ANSI/ACCA Manual J |
| | Recreational Vehicle Cooking Gas Appliances | CSA | ANSI Z21.57-2010 |
| | Oil-Fired Warm Air Heating Appliances for Mobile Housing and Recreational Vehicles | CSA | B140.10-06 (R2011) |
| | Manufactured Homes | CSA | CAN/CSA-Z240 MH Series-09 (R2014) |
| | Recreational Vehicles | CSA | CAN/CSA-Z240 RV Series-08 (R2013) |
| | Gas Supply Connectors for Manufactured Homes | IAPMO | IAPMO TS 9-2003 |
| | Fuel Supply: Manufactured/Mobile Home Parks & Recreational Vehicle Parks | IAPMO | Chapter 13, Part II |
| | Manufactured Housing Construction and Safety Standards | ICC/ANSI | HUD 24 CFR Part 3280 (2008) |
| | Manufactured Housing | NFPA | NFPA 501-2013 |
| | Recreational Vehicles | NFPA | NFPA 1192-2015 |
| | Plumbing System Components for Recreational Vehicles | NSF | ANSI/NSF 24-2010 |
| | Low Voltage Lighting Fixtures for Use in Recreational Vehicles | UL | ANSI/UL 234-2005 |
| | Liquid Fuel-Burning Heating Appliances for Manufactured Homes and Recreational Vehicles | UL | ANSI/UL 307A-2009 |
| | Gas-Burning Heating Appliances for Manufactured Homes and Recreational Vehicles | UL | UL 307B-2006 |
| Motors and Generators | Installation and Maintenance of Farm Standby Electric Power | ASABE | ANSI/ASABE EP364.3-2006 |
| | Nuclear Power Plant Air-Cleaning Units and Components | ASME | ASME N509-2002 (RA08) |
| | Testing of Nuclear Air Treatment Systems | ASME | ASME N510-2007 |
| | Fired Steam Generators | ASME | ASME PTC 4-2013 |
| | Gas Turbine Heat Recovery Steam Generators | ASME | ASME PTC 4.4-2008 (RA13) |
| | Test Methods for Film-Insulated Magnet Wire | ASTM | ASTM D1676-03 (2011) |
| | Test Method for Evaluation of Engine Oils in a High Speed, Single-Cylinder Diesel Engine—Caterpillar 1R Test Procedure | ASTM | ASTM D6923-14 |
| | Test Method for Evaluation of Diesel Engine Oils in the T-11 Exhaust Gas Recirculation Diesel Engine | ASTM | ASTM D7156-13 |
| | Test Methods, Marking Requirements, and Energy Efficiency Levels for Three-Phase Induction Motors | CSA | CSA C390-10 |
| | Motors and Generators | CSA | C22.2 No. 100-14 |
| | Emergency Electrical Power Supply for Buildings | CSA | CSA C282-09 |
| | Energy Efficiency Test Methods for Small Motors | CSA | CAN/CSA C747-09 (R2014) |
| | Standard Test Procedure for Polyphase Induction Motors and Generators | IEEE | IEEE 112-1996 |
| | Motors and Generators | NEMA | NEMA MG 1-2014 |
| | Energy Management Guide for Selection and Use of Fixed Frequency Medium AC Squirrel-Cage Polyphase Industrial Motors | NEMA | NEMA MG 10-2013 |
| | Energy Management Guide for Selection and Use of Single-Phase Motors | NEMA | NEMA MG 11-1977 (R2012) |
| | Magnet Wire | NEMA | ANSI/NEMA MW 1000-2014 |
| | Motion/Position Control Motors, Controls, and Feedback Devices | NEMA | NEMA ICS 16-2001 |
| | Rotating Electrical Machines—General Requirements | UL | UL 1004-1-2012 |
| | Electric Motors and Generators for Use in Hazardous (Classified) Locations | UL | ANSI/UL 674-2011 |
| | Overheating Protection for Motors | UL | ANSI/UL 2111-1997 |
| Operation and Maintenance | Preparation of Operating and Maintenance Documentation for Building Systems | ASHRAE | ASHRAE <i>Guideline</i> 4-2008 (RA13) |
| | Sustainable, High Performance Operations and Maintenance | ASHRAE | ASHRAE <i>Guideline</i> 32-2012 |
| | Inspection and Maintenance of Commercial-Building HVAC Systems | ASHRAE/ ACCA | ANSI/ASHRAE/ACCA 180-2012 |
| | International Property Maintenance Code® (2015) | ICC | IPMC |
| Panel Heating and Cooling | Method of Testing for Rating Ceiling Panels for Sensible Heating and Cooling | ASHRAE | ANSI/ASHRAE 138-2013 |
| Pipe, Tubing, and Fittings | Scheme for the Identification of Piping Systems | ASME | ASME A13.1-2007 (RA13) |
| | Pipe Threads, General Purpose (Inch) | ASME | ANSI/ASME B1.20.1-2013 |
| | Wrought Copper and Copper Alloy Braze-Joint Pressure Fittings | ASME | ASME B16.50-2013 |
| | Power Piping | ASME | ASME B31.1-2014 |
| | Process Piping | ASME | ASME B31.3-2014 |
| | Refrigeration Piping and Heat Transfer Components | ASME | ASME B31.5-2013 |
| | Building Services Piping | ASME | ASME B31.9-2014 |
| | Practice for Obtaining Hydrostatic or Pressure Design Basis for “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Fittings | ASTM | ASTM D2992-12 |
| | Specification for Welding of Austenitic Stainless Steel Tube and Piping Systems in Sanitary Applications | AWS | AWS D18.1:2009 |
| | Standards of the Expansion Joint Manufacturers Association, 9th ed. | EJMA | EJMA |
| | Pipe Hangers and Supports—Materials, Design and Manufacture | MSS | ANSI/MSS SP-58-2009 |

Selected Codes and Standards Published by Various Societies and Associations (Continued)

| Subject | Title | Publisher | Reference |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------|
| | Pipe Hangers and Supports—Selection and Application | MSS | ANSI/MSS SP-69-2003 |
| | General Welding Guidelines (2009) | NCPWB | NCPWB |
| | National Fuel Gas Code | AGA/NFPA | ANSI Z223.1/NFPA 54-2015 |
| | Refrigeration Tube Fittings—General Specifications | SAE | SAE J513-1999 |
| | Seismic Restraint Manual—Guidelines for Mechanical Systems, 3rd ed. | SMACNA | ANSI/SMACNA 001-2008 |
| | Tube Fittings for Flammable and Combustible Fluids, Refrigeration Service, and Marine Use | UL | ANSI/UL 109-1997 |
| Plastic | Specification for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe, Schedules 40 and 80 | ASTM | ASTM D1527-99 (2005) |
| | Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120 | ASTM | ASTM D1785-12 |
| | Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products | ASTM | ASTM D2837-13e1 |
| | Specification for Perfluoroalkoxy (PFA)-Fluoropolymer Tubing | ASTM | ASTM D6867-03 (2014) |
| | Specification for Polyethylene Stay in Place Form System for End Walls for Drainage Pipe | ASTM | ASTM D7082-04 (2010) |
| | Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80 | ASTM | ASTM F441/F441M-13e1 |
| | Specification for Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene Tubing OD Controlled SDR9 | ASTM | ASTM F2262-09 |
| | Test Method for Evaluating the Oxidative Resistance of Polyethylene (PE) Pipe to Chlorinated Water | ASTM | ASTM F2263-14 |
| | Specification for 12 to 60 in. [300 to 1500 mm] Annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Gravity-Flow Storm Sewer and Subsurface Drainage Applications | ASTM | ASTM F2306/F2306M-14 |
| | Test Method for Determining Chemical Compatibility of Substances in Contact with Thermoplastic Pipe and Fittings Materials | ASTM | ASTM F2331-11 |
| | Test Method for Determining Thermoplastic Pipe Wall Stiffness | ASTM | ASTM F2433-05 (2013) |
| | Specification for Steel Reinforced Polyethylene (PE) Corrugated Pipe | ASTM | ASTM F2435-12 |
| | Electrical Polyvinyl Chloride (PVC) Tubing and Conduit | NEMA | NEMA TC 2-2013 |
| | PVC Plastic Utilities Duct for Underground Installation | NEMA | NEMA TC 6 and 8-2013 |
| | Smooth Wall Coilable Polyethylene Electrical Plastic Duct | NEMA | NEMA TC 7-2013 |
| | Fittings for PVC Plastic Utilities Duct for Underground Installation | NEMA | NEMA TC 9-2004 (R2012) |
| | Electrical Nonmetallic Tubing (ENT) | NEMA | NEMA TC 13-2005 |
| | Plastics Piping System Components and Related Materials | NSF | ANSI/NSF 14-2014 |
| | Rubber Gasketed Fittings | UL | ANSI/UL 213-2008 |
| Metal | Welded and Seamless Wrought Steel Pipe | ASME | ASME B36.10M-2004 (RA10) |
| | Stainless Steel Pipe | ASME | ASME B36.19M-2004 (RA10) |
| | Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless | ASTM | ASTM A53/53M-12 |
| | Specification for Seamless Carbon Steel Pipe for High-Temperature Service | ASTM | ASTM A106/A106M-14 |
| | Specification for Steel Line Pipe, Black, Furnace-Butt-Welded | ASTM | ASTM A1037/A1037M-05 (2012) |
| | Specification for Composite Corrugated Steel Pipe for Sewers and Drains | ASTM | ASTM A1042/A1042M-04 (2009) |
| | Specification for Seamless Copper Pipe, Standard Sizes | ASTM | ASTM B42-10 |
| | Specification for Seamless Copper Tube | ASTM | ASTM B75/B75M-11 |
| | Specification for Seamless Copper Water Tube | ASTM | ASTM B88-14 |
| | Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service | ASTM | ASTM B280-13 |
| | Specification for Hand-Drawn Copper Capillary Tube for Restrictor Applications | ASTM | ASTM B360-09 |
| | Specification for Welded Copper Tube for Air Conditioning and Refrigeration Service | ASTM | ASTM B640-12a |
| | Specification for Copper-Beryllium Seamless Tube UNS Nos. C17500 and C17510 | ASTM | ASTM B937-04 (2010) |
| | Test Method for Rapid Determination of Corrosiveness to Copper from Petroleum Products Using a Disposable Copper Foil Strip | ASTM | ASTM D7095-04 (2014) |
| | Thickness Design of Ductile-Iron Pipe | AWWA | ANSI/AWWA C150/A21.50-14 |
| | Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies | NEMA | NEMA FB 1-2012 |
| | Polyvinyl-Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit | NEMA | NEMA RN 1-2005 (R2013) |
| Plumbing | Backwater Valves | ASME | ASME A112.14.1-2003 (RA12) |
| | Plumbing Supply Fittings | ASME | ASME A112.18.1-2012 |
| | Plumbing Waste Fittings | ASME | ASME A112.18.2-2011 |
| | Performance Requirements for Backflow Protection Devices and Systems in Plumbing Fixture Fittings | ASME | ASME A112.18.3-2002 (RA12) |
| | Uniform Plumbing Code (2012) (with IAPMO Installation Standards) | IAPMO | IAPMO |
| | International Plumbing Code® (2015) | ICC | IPC |
| | International Private Sewage Disposal Code® (2015) | ICC | IPSDC |
| | 2012 National Standard Plumbing Code (NSPC) | PHCC | NSPC 2012 |

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| Subject | Title | Publisher | Reference |
|---------------------|------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------------------|
| | 2012 National Standard Plumbing Code—Illustrated Standard Plumbing Code (1997) | PHCC SBCCI | PHCC 2012 SPC |
| Pumps | Centrifugal Pumps | ASME | ASME PTC 8.2-1990 |
| | Specification for Horizontal End Suction Centrifugal Pumps for Chemical Process | ASME | ASME B73.1-2012 |
| | Specification for Vertical-in-Line Centrifugal Pumps for Chemical Process | ASME | ASME B73.2-2003 (RA08) |
| | Specification for Sealless Horizontal End Suction Metallic Centrifugal Pumps for Chemical Process | ASME | ASME B73.3-2003 (RA08) |
| | Specification for Thermoplastic and Thermoset Polymer Material Horizontal End Suction Centrifugal Pumps for Chemical Process | ASME | ASME B73.5M-1995 (RA07) |
| | Liquid Pumps | CSA | CAN/CSA-C22.2 No. 108-14 |
| | Energy Efficiency Test Methods for Small Pumps | CSA | CAN/CSA C820-02 (R2012) |
| | Performance Standard for Liquid Ring Vacuum Pumps, 4th ed. (2011) | HEI | HEI 2854 |
| | Rotodynamic (Centrifugal) Pumps for Nomenclature and Definitions | HI | ANSI/HI 1.1-1.2-2014 |
| | Rotodynamic (Centrifugal) Pumps for Design and Application | HI | ANSI/HI 1.3-2013 |
| | Rotodynamic (Centrifugal) Pumps for Manuals Describing Installation, Operation and Maintenance | HI | ANSI/HI 1.4-2014 |
| | Rotodynamic (Vertical) Nomenclature | HI | ANSI/HI 2.1-2.2-2014 |
| | Rotodynamic (Vertical) Application | HI | ANSI/HI 2.3-2013 |
| | Rotodynamic (Vertical) Operations | HI | ANSI/HI 2.4-2014 |
| | Rotary Pumps for Nomenclature, Definitions, Application, and Operation | HI | ANSI/HI 3.1-3.5-2008 |
| | Sealless, Magnetically Driven Rotary Pumps for Nomenclature, Definitions, Application, Operation, and Test | HI | ANSI/HI 4.1-4.6-2010 |
| | Sealless Rotodynamic Pumps for Nomenclature, Definitions, Application, Operation, and Test | HI | ANSI/HI 5.1-5.6-2010 |
| | Reciprocating Pumps for Nomenclature, Definitions, Application, and Operation | HI | ANSI/HI 6.1-6.5-2000 |
| | Direct Acting (Steam) Pumps for Nomenclature, Definitions, Application, and Operation | HI | ANSI/HI 8.1-8.5-2000 |
| | Pumps—General Guidelines for Types, Definitions, Application, Sound Measurement and Decontamination | HI | ANSI/HI 9.1-9.5-2000 |
| | Rotodynamic Pumps for Assessment of Allowable Nozzle Loads | HI | ANSI/HI 9.6.2-2011 |
| | Centrifugal and Vertical Pumps for Allowable Operating Region | HI | ANSI/HI 9.6.3-2012 |
| | Rotodynamic Pumps for Vibration Measurements and Allowable Values | HI | ANSI/HI 9.6.4-2009 |
| | Rotodynamic (Centrifugal and Vertical) Pumps Guideline for Condition Monitoring | HI | ANSI/HI 9.6.5-2009 |
| | Intake Design for Rotodynamic Pumps | HI | ANSI/HI 9.8-2012 |
| | Engineering Data Book, 2nd ed. | HI | HI (1990) |
| | Equipment for Swimming Pools, Spas, Hot Tubs and Other Recreational Water Facilities | NSF | ANSI/NSF 50-2013 |
| | Pumps for Oil-Burning Appliances | UL | UL 343-2008 |
| | Motor-Operated Water Pumps | UL | ANSI/UL 778-2010 |
| | Swimming Pool Pumps, Filters, and Chlorinators | UL | ANSI/UL 1081-2008 |
| Radiators | Testing and Rating Standard for Baseboard Radiation, 8th ed. (2005) | HYDI | IBR |
| | Testing and Rating Standard for Finned Tube (Commercial) Radiation, 6th ed. (2005) | HYDI | IBR |
| Receivers | Refrigerant Liquid Receivers | AHRI | ANSI/AHRI 495-2005 |
| | Refrigerant-Containing Components and Accessories, Nonelectrical | UL | ANSI/UL 207-2009 |
| Refrigerants | Threshold Limit Values for Chemical Substances (updated annually) | ACGIH | ACGIH |
| | Specifications for Refrigerants | AHRI | AHRI 700-2014 |
| | Refrigerant Recovery/Recycling Equipment | AHRI | AHRI 740-1998 |
| | Refrigerant Information Recommended for Product Development and Standards | ASHRAE | ASHRAE <i>Guideline</i> 6-2008 |
| | Method of Testing Flow Capacity of Refrigerant Capillary Tubes | ASHRAE | ANSI/ASHRAE 28-1996 (RA10) |
| | Designation and Safety Classification of Refrigerants | ASHRAE | ANSI/ASHRAE 34-2013 |
| | Sealed Glass Tube Method to Test the Chemical Stability of Materials for Use Within Refrigerant Systems | ASHRAE | ANSI/ASHRAE 97-2007 |
| | Refrigeration Oil Description | ASHRAE | ANSI/ASHRAE 99-2006 |
| | Reducing the Release of Halogenated Refrigerants from Refrigerating and Air-Conditioning Equipment and Systems | ASHRAE | ANSI/ASHRAE 147-2013 |
| | Methods of Testing Capacity for Refrigerant Pressure Regulators | ASHRAE | ANSI/ASHRAE 158.2-2011 |
| | Method of Test to Determine the Performance of Halocarbon Refrigerant Leak Detectors | ASHRAE | ANSI/ASHRAE 173-2012 |
| | Test Method for Acid Number of Petroleum Products by Potentiometric Titration | ASTM | ASTM D664-11a |
| | Test Method for Concentration Limits of Flammability of Chemical (Vapors and Gases) | ASTM | ASTM E681-09 |
| | Refrigerant-Containing Components for Use in Electrical Equipment | CSA | C22.2 No. 140.3-09 (R2014) |
| | Refrigerants—Designation System | ISO | ISO 817:2014 |
| | Procedure Retrofitting CFC-12 (R-12) Mobile Air-Conditioning Systems to HFC-134a (R-134a) | SAE | SAE J1661-2011 |
| | Recommended Service Procedure for the Containment of CFC-12 (R-12) | SAE | SAE J1989-2011 |

Selected Codes and Standards Published by Various Societies and Associations (Continued)

| Subject | Title | Publisher | Reference |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------|
| | Standard of Purity for Recycled R-134a (HFC-134a) and R-1234yf (HFO-1234yf) for Use in Mobile Air-Conditioning Systems | SAE | SAE J2099-2012 |
| | HFC-134a (R-134a) Service Hose Fittings for Automotive Air-Conditioning Service Equipment | SAE | SAE J2197-2011 |
| | CFC-12 (R-12) Refrigerant Recovery Equipment for Mobile Automotive Air-Conditioning Systems | SAE | SAE J2209-2011 |
| | Recommended Service Procedure for the Containment of HFC-134a Refrigerant-Containing Components and Accessories, Nonelectrical Refrigerant Recovery/Recycling Equipment | SAE UL UL | SAE J2211-2011 ANSI/UL 207-2009 ANSI/UL 1963-2011 |
| | Refrigerants | UL | ANSI/UL 2182-2006 |
| Refrigeration | Safety Standard for Refrigeration Systems | ASHRAE | ANSI/ASHRAE 15-2013 |
| | Mechanical Refrigeration Code | CSA | B52-13 |
| | Refrigeration Equipment | CSA | CAN/CSA-C22.2 No. 120-13 |
| | Equipment, Design and Installation of Ammonia Mechanical Refrigerating Systems | IIAR | ANSI/IIAR 2-2008 |
| | Refrigerated Medical Equipment | UL | ANSI/UL 416-1993 |
| Refrigeration Systems | Ejectors | ASME | ASME PTC 24-1976 (RA82) |
| | Safety Standard for Refrigeration Systems | ASHRAE | ANSI/ASHRAE 15-2013 |
| | Designation and Safety Classification of Refrigerants | ASHRAE | ANSI/ASHRAE 34-2013 |
| | Reducing the Release of Halogenated Refrigerants from Refrigerating and Air-Conditioning Equipment and Systems | ASHRAE | ANSI/ASHRAE 147-2013 |
| | Testing of Refrigerating Systems | ISO | ISO 916-1968 |
| | Standards for Steam Jet Vacuum Systems, 7th ed. (2012) | HEI | HEI 2866-1 |
| Transport | Mechanical Transport Refrigeration Units | AHRI | ANSI/AHRI 1111-2013 |
| | Mechanical Refrigeration and Air-Conditioning Installations Aboard Ship | ASHRAE | ANSI/ASHRAE 26-2010 |
| | General Requirements for Application of Vapor Cycle Refrigeration Systems for Aircraft | SAE | SAE ARP731C-2003 (R2010) |
| | Safety Standard for Motor Vehicle Refrigerant Vapor Compression Systems | SAE | SAE J639-2011 |
| Refrigerators | | | |
| Commercial | Method of Testing Commercial Refrigerators and Freezers | ASHRAE | ANSI/ASHRAE 72-2014 |
| | Energy Performance Standard for Commercial Refrigerated Display Cabinets and Merchandise | CSA | CAN/CSA-C657-12 |
| | Energy Performance of Food Service Refrigerators and Freezers | CSA | C827-10 |
| | Gas Food Service Equipment | CSA | ANSI Z83.11-2006/CSA 1.8A-2006 (R2011) |
| | Food Equipment | NSF | ANSI/NSF 2-2014 |
| | Commercial Refrigerators and Freezers | NSF | ANSI/NSF 7-2014 |
| | Mobile Food Carts | NSF | ANSI/NSF 59-2012 |
| | Refrigeration Unit Coolers | UL | ANSI/UL 412-2011 |
| | Refrigerating Units | UL | ANSI/UL 427-2011 |
| | Commercial Refrigerators and Freezers | UL | ANSI/UL 471-2010 |
| Household | Refrigerators, Refrigerator-Freezers and Freezers | AHAM | ANSI/AHAM HRF-1-2008 |
| | Refrigerators Using Gas Fuel | CSA | ANSI Z21.19-2014/CSA1.4-2014 |
| | Energy Performance and Capacity of Household Refrigerators, Refrigerator-Freezers, Freezers, and Wine Chillers | CSA | CAN/CSA C300-12 |
| | Household Refrigerators and Freezers | UL/CSA | ANSI/UL 250-1993/C22.2 No. 63-93 (R2013) |
| Retrofitting | | | |
| Building | Residential Duct Diagnostics and Repair | ACCA | ACCA |
| | Good HVAC Practices for Residential and Commercial Buildings | ACCA | ACCA |
| | Building Systems Analysis and Retrofit Manual, 2nd ed. | SMACNA | SMACNA 2011 |
| Refrigerant | Procedure for Retrofitting CFC-12 (R-12) Mobile Air Conditioning Systems to HFC-134a (R-134a) | SAE | SAE J1661-2011 |
| Roof Ventilators | Commercial Low Pressure, Low Velocity Duct System Design | ACCA | ACCA Manual Q |
| | Power Ventilators | UL | ANSI/UL 705-2004 |
| Safety | Guideline for Risk Management of Public Health and Safety in Buildings | ASHRAE | ASHRAE <i>Guideline</i> 29-2009 |
| Seismic Restraint | Method of Test of Seismic Restraint Devices for HVAC&R Equipment | ASHRAE | ANSI/ASHRAE 171-2008 |
| | Seismic Restraint Manual—Guidelines for Mechanical Systems, 3rd ed. | SMACNA | ANSI/SMACNA 001-2008 |
| Smoke Control Systems | The Commissioning Process for Smoke Management Systems | ASHRAE | ASHRAE <i>Guideline</i> 1.5-2012 |
| | Laboratory Methods of Testing Fans Used to Exhaust Smoke in Smoke Management Systems | ASHRAE | ANSI/ASHRAE 149-2013 |
| | Smoke-Control Systems Utilizing Barriers and Pressure Differences | NFPA | NFPA 92A-2009 |
| | Smoke Management Systems in Malls, Atria, and Large Spaces | NFPA | NFPA 92B-2009 |
| | Ceiling Dampers | UL | ANSI/UL 555C-2014 |

Selected Codes and Standards Published by Various Societies and Associations (*Continued*)

| Subject | Title | Publisher | Reference | |
|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------|--------------------|
| | Smoke Dampers | UL | ANSI/UL 555S-2014 | |
| Solar Equipment | Thermal Performance Testing of Solar Ambient Air Heaters | ASABE | ANSI/ASAE S423-1991 (R2012) | |
| | Testing and Reporting Solar Cooker Performance | ASABE | ASAE S580.1-2013 | |
| | Method of Measuring Solar-Optical Properties of Materials | ASHRAE | ASHRAE 74-1988 | |
| | Methods of Testing to Determine the Thermal Performance of Solar Collectors | ASHRAE | ANSI/ASHRAE 93-2010 (RA14) | |
| | Methods of Testing to Determine the Thermal Performance of Solar Domestic Water Heating Systems | ASHRAE | ANSI/ASHRAE 95-1981 (RA87) | |
| | Methods of Testing to Determine the Thermal Performance of Unglazed Flat-Plate Liquid-Type Solar Collectors | ASHRAE | ANSI/ASHRAE 96-1980 (RA89) | |
| | Practice for Installation and Service of Solar Space Heating Systems for One and Two Family Dwellings | ASTM | ASTM E683-91 (2013) | |
| | Practice for Evaluating Thermal Insulation Materials for Use in Solar Collectors | ASTM | ASTM E861-13 | |
| | Practice for Installation and Service of Solar Domestic Water Heating Systems for One and Two Family Dwellings | ASTM | ASTM E1056-13 | |
| | Reference Solar Spectral Irradiance at the Ground at Different Receiving Conditions—Part 1: Direct Normal and Hemispherical Solar Irradiance for Air Mass 1.5 | ISO | ISO 9845:1992 | |
| | Solar Collectors | CSA | CAN/CSA F378 Series-11 | |
| | Packaged Solar Domestic Hot Water Systems (Liquid to Liquid Heat Transfer) | CSA | CAN/CSA F379 Series-09 (R2013) | |
| | Installation Code for Solar Domestic Hot Water Systems | CSA | CAN/CSA F383-08 (R2013) | |
| | Solar Heating—Domestic Water Heating Systems—Part 2: Outdoor Test Methods for System Performance Characterization and Yearly Performance Prediction of Solar-Only Systems | ISO | ISO 9459-2:1995 | |
| | Solar Energy—Solar Thermal Collectors—Test Methods | ISO | ISO 9806:2013 | |
| Solar Water Heaters—Elastomeric Materials for Absorbers, Connecting Pipes and Fittings—Method of Assessment | ISO | ISO 9808:1990 | | |
| Solar Energy—Calibration of a Pyranometer Using a Pyrliometer | ISO | ISO 9846:1993 | | |
| Solenoid Valves | Solenoid Valves for Use with Volatile Refrigerants | AHRI | ANSI/AHRI 760-2014 | |
| | Methods of Testing Capacity of Refrigerant Solenoid Valves | ASHRAE | ANSI/ASHRAE 158.1-2012 | |
| | Electrically Operated Valves | UL | UL 429-2013 | |
| Sound Measurement | Threshold Limit Values for Physical Agents (updated annually) | ACGIH | ACGIH | |
| | Specification for Sound Level Meters | ASA | ANSI S1.4-2014 | |
| | Specification for Octave-Band and Fractional-Octave-Band Analog and Digital Filters | ASA | ANSI S1.11-2014 | |
| | Microphones, Part 1: Specifications for Laboratory Standard Microphones | ASA | ANSI S1.15-1997/Part 1 (R2011) | |
| | Part 2: Primary Method for Pressure Calibration of Laboratory Standard Microphones by the Reciprocity Technique | ASA | ANSI S1.15-2005/Part 2 (R2010) | |
| | Specification for Acoustical Calibrators | ASA | ANSI S1.40-2006 (R2011) | |
| | Measurement of Industrial Sound | ASME | ASME PTC 36-2004 (RA13) | |
| | Test Method for Measuring Acoustical and Airflow Performance of Duct Liner Materials and Prefabricated Silencers | ASTM | ASTM E477-13 | |
| | Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods | ASTM | ASTM E2235-04 (2012) | |
| | Procedural Standards for the Measurement of Sound and Vibration, 2nd ed. (2006) | NEBB | NEBB | |
| | HVAC Systems Sound and Vibration Procedural Guide, 1st ed. | SMACNA | SMACNA 2013 | |
| Fans | Reverberant Room Method for Sound Testing of Fans | AMCA | AMCA 300-08 | |
| | Methods for Calculating Fan Sound Ratings from Laboratory Test Data | AMCA | AMCA 301-90 | |
| | Application of Sone Ratings for Non-Ducted Air Moving Devices | AMCA | AMCA 302-73 (R2008) | |
| | Application of Sound Power Level Ratings for Fans | AMCA | AMCA 303-79 (R2008) | |
| | Acoustics—Measurement of Airborne Noise Emitted and Structure-Borne Vibration Induced by Small Air-Moving Devices—Part 1: Airborne Noise Measurement | ASA | ANSI/ASA S12.11-1-2013/ISO 10302-1:2013 | |
| | Part 2: Structure-Borne Vibration | ASA | ANSI/ASA S12.11-2-2013/ISO 10302-2:2013 | |
| | Laboratory Method of Testing to Determine the Sound Power in a Duct | ASHRAE/ AMCA | ANSI/ASHRAE 68-1997/ AMCA 330-97 | |
| | Other Equipment | Sound Rating of Outdoor Unitary Equipment | AHRI | ANSI/AHRI 270-2008 |
| | | Application of Sound Rating Levels of Outdoor Unitary Equipment | AHRI | ANSI/AHRI 275-2010 |
| | | Sound Rating and Sound Transmission Loss of Packaged Terminal Equipment | AHRI | ANSI/AHRI 300-2008 |
| Sound Rating of Non-Ducted Indoor Air-Conditioning Equipment | | AHRI | ANSI/AHRI 350-2008 | |
| Sound Rating of Large Air-Cooled Outdoor Refrigerating and Air-Conditioning Equipment | | AHRI | ANSI/AHRI 370-2011 | |
| Method of Rating Sound and Vibration of Refrigerant Compressors | | AHRI | ANSI/AHRI 530-2011 | |
| Method of Measuring Machinery Sound Within an Equipment Space | | AHRI | ANSI/AHRI 575-2008 | |
| Statistical Methods for Determining and Verifying Stated Noise Emission Values of Machinery and Equipment | | ASA | ANSI S12.3-1985 (R2011) | |
| Sound Level Prediction for Installed Rotating Electrical Machines | NEMA | NEMA MG 3-1974 (R2012) | | |

Selected Codes and Standards Published by Various Societies and Associations (Continued)

| Subject | Title | Publisher | Reference |
|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------|
| Techniques | Preferred Frequencies, Frequency Levels, and Band Numbers for Acoustical Measurements | ASA | ANSI/ASA S1.6-1984 (R2011) |
| | Reference Quantities for Acoustical Levels | ASA | ANSI/ASA S1.8-1989 (R2011) |
| | Measurement of Sound Pressure Levels in Air | ASA | ANSI/ASA S1.13-2005 (R2010) |
| | Procedure for the Computation of Loudness of Steady Sound | ASA | ANSI/ASA S3.4-2007 (R2012) |
| | Criteria for Evaluating Room Noise | ASA | ANSI/ASA S12.2-2008 |
| | Methods for Determining the Insertion Loss of Outdoor Noise Barriers | ASA | ANSI/ASA S12.8-1998 (R2013) |
| | Engineering Method for the Determination of Sound Power Levels of Noise Sources Using Sound Intensity | ASA | ANSI/ASA S12.12-1992 (R2012) |
| | Procedures for Outdoor Measurement of Sound Pressure Level | ASA | ANSI/ASA S12.18-1994 (R2009) |
| | Methods for Measurement of Sound Emitted by Machinery and Equipment at Workstations and Other Specified Positions | ASA | ANSI/ASA S12.43-1997 (R2012) |
| | Methods for Calculation of Sound Emitted by Machinery and Equipment at Workstations and Other Specified Positions from Sound Power Level | ASA | ANSI/ASA S12.44-1997 (R2012) |
| | Acoustics—Determination of Sound Power Levels and Sound Energy Levels of Noise Sources Using Sound Pressure—Precision Method for Reverberation Test Rooms | ASA | ANSI/ASA S12.51-2012/ISO 3741:2012 |
| | Acoustics—Determination of Sound Power Levels of Noise Sources Using Sound Pressure—Engineering Methods for Small, Movable Sources in Reverberant Fields—Part 1: Comparison Method for Hard-Walled Test Rooms | ASA | ANSI/ASA S12.53/Part 1-2011/ISO 3743-1:2011 |
| | Part 2: Methods for Special Reverberation Test Rooms | ASA | ANSI/ASA S12.53/Part 2-1999 (R2015)/ISO 3743-2:1999 (R2015) |
| | Acoustics—Determination of Sound Power Levels and Sound Energy Levels of Noise Sources Using Sound Pressure—Engineering Methods for an Essentially Free Field over a Reflecting Plane | ASA | ANSI/ASA S12.54-2011/ISO 3744:2011 |
| | Acoustics—Determination of Sound Power Levels and Sound Energy Levels of Noise Sources Using Sound Pressure—Survey Method Using an Enveloping Measurement Surface over a Reflecting Plane | ASA | ANSI/ASA S12.56-2011/ISO 3746:2011 |
| | Test Method for Impedance and Absorption of Acoustical Materials by the Impedance Tube Method | ASTM | ASTM C384-04 (2011) |
| | Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method | ASTM | ASTM C423-09a |
| | Test Method for Measurement of Airborne Sound Attenuation Between Rooms in Buildings | ASTM | ASTM E336-14 |
| | Test Method for Impedance and Absorption of Acoustical Materials Using a Tube, Two Microphones and a Digital Frequency Analysis System | ASTM | ASTM E1050-12 |
| | Test Method for Evaluating Masking Sound in Open Offices Using A-Weighted and One-Third Octave Band Sound Pressure Levels | ASTM | ASTM E1573-09 |
| | Test Method for Measurement of Sound in Residential Spaces | ASTM | ASTM E1574-98 (2014) |
| | Acoustics—Method for Calculating Loudness Level | ISO | ISO 532:1975 |
| | Acoustics—Determination of Sound Power Levels of Noise Sources Using Sound Intensity; Part 1: Measurement at Discrete Points | ISO | ISO 9614-1:1993 |
| Part 2: Measurement by Scanning | ISO | ISO 9614-2:1996 | |
| Procedural Standards for the Measurement of Sound and Vibration, 2nd ed. (2006) | NEBB | NEBB | |
| Terminology | Acoustical Terminology | ASA | ANSI S1.1-1994 (R2004) |
| | Terminology Relating to Building and Environmental Acoustics | ASTM | ASTM C634-13 |
| Space Heaters | Methods of Testing for Rating Combination Space-Heating and Water-Heating Appliances | ASHRAE | ANSI/ASHRAE 124-2007 |
| | Gas-Fired Room Heaters, Vol. II, Unvented Room Heaters | CSA | ANSI Z21.11.2-2013 |
| | Vented Gas-Fired Space Heating Appliances | CSA | ANSI Z21.86-2008/CSA 2.32-2008 (R2014) |
| | Movable and Wall- or Ceiling-Hung Electric Room Heaters | UL | UL 1278-2014 |
| Fixed and Location-Dedicated Electric Room Heaters | UL | UL 2021-2013 | |
| Sustainability | Sustainable, High Performance Operations and Maintenance | ASHRAE | ASHRAE <i>Guideline</i> 32-2012 |
| | Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings | ASHRAE/ USGBC | ANSI/ASHRAE/USGBC/IES 189.1-2014 |
| | International Green Construction Code™ (2012) | ICC | IGCC |
| Symbols | Graphic Symbols for Heating, Ventilating, Air-Conditioning, and Refrigerating Systems | ASHRAE | ANSI/ASHRAE 134-2005 (RA14) |
| | Graphical Symbols for Plumbing Fixtures for Diagrams Used in Architecture and Building Construction | ASME | ANSI/ASME Y32.4-1977 (RA04) |
| | Symbols for Mechanical and Acoustical Elements as Used in Schematic Diagrams | ASME | ANSI/ASME Y32.18-1972 (RA13) |
| | Practice for Mechanical Symbols, Shipboard Heating, Ventilation, and Air Conditioning (HVAC) | ASTM | ASTM F856-97 (2014) |
| | Standard Symbols for Welding, Brazing, and Nondestructive Examination | AWS | AWS A2.4:2012 |
| | Graphic Symbols for Electrical and Electronics Diagrams | IEEE | ANSI/CSA/IEEE 315-1975 (R1993) |
| | Standard for Logic Circuit Diagrams | IEEE | IEEE 991-1986 (R1994) |
| American National Standard for Metric Practice | IEEE/ASTM | IEEE/ASTM-S110-10 | |

Selected Codes and Standards Published by Various Societies and Associations (Continued)

| Subject | Title | Publisher | Reference |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------|---------------------------------------|
| | Abbreviations and Acronyms for Use on Drawings and Related Documents | ASME | ASME Y14.38-2007 (RA13) |
| | Engineering Drawing Practices | ASME | ASME Y14.100-2013 |
| | American National Standard for Safety Colors | NEMA | ANSI/NEMA Z535.1-2006 (R2011) |
| Terminals, Wiring | Electrical Quick-Connect Terminals | UL | ANSI/UL 310-2014 |
| | Wire Connectors | UL | ANSI/UL 486A-486B-2013 |
| | Splicing Wire Connectors | UL | ANSI/UL 486C-2013 |
| | Equipment Wiring Terminals for Use with Aluminum and/or Copper Conductors | UL | ANSI/UL 486E-2009 |
| Testing and Balancing | AABC National Standards for Total System Balance (2002) | AABC | AABC |
| | Industrial Process/Power Generation Fans: Site Performance Test Standard | AMCA | AMCA 803-02 (R2008) |
| | Guidelines for Measuring and Reporting Environmental Parameters for Plant Experiments in Growth Chambers | ASABE | ANSI/ASAE EP411.5-2012 |
| | HVAC&R Technical Requirements for the Commissioning Process | ASHRAE | ASHRAE <i>Guideline</i> 1.1-2007 |
| | Measurement, Testing, Adjusting, and Balancing of Building HVAC Systems | ASHRAE | ANSI/ASHRAE 111-2008 |
| | Rotary Pump Tests | HI | ANSI/HI 3.6-2010 |
| | Air-Operated Pump Tests | HI | ANSI/HI 10.6-2010 |
| | Pumps—General Guidelines for Types, Definitions, Application, Sound Measurement and Decontamination | HI | HI 9.1-9.5-2000 |
| | Rotodynamic Submersible Pump Tests | HI | ANSI/HI 11.6-2012 |
| | Procedural Standards for Certified Testing of Cleanrooms, 3rd ed. (2009) | NEBB | NEBB |
| | Procedural Standards for TAB Environmental Systems, 8th ed. (2015) | NEBB | NEBB |
| | HVAC Systems Testing, Adjusting and Balancing, 3rd ed. | SMACNA | SMACNA 2002 |
| Thermal Storage | Thermal Energy Storage: A Guide for Commercial HVAC Contractors | ACCA | ACCA |
| | Method of Testing Thermal Storage Devices with Electrical Input and Thermal Output Based on Thermal Performance | ASHRAE | ANSI/ASHRAE 94.2-2010 |
| | Measurement, Testing, Adjusting, and Balancing of Building HVAC Systems | ASHRAE | ANSI/ASHRAE 111-2008 |
| | Method of Testing the Performance of Cool Storage Systems | ASHRAE | ANSI/ASHRAE 150-2000 (RA14) |
| Transformers | Minimum Efficiency Values for Liquid-Filled Distribution Transformers | CSA | CAN/CSA-C802.1-13 |
| | Minimum Efficiency Values for Dry-Type Transformers | CSA | CAN/CSA-C802.2-12 |
| | Maximum Losses For Power Transformers | CSA | CAN/CSA-C802.3-01 (R2012) |
| | Guide for Determining Energy Efficiency of Distribution Transformers | NEMA | NEMA TP-1-2002 |
| Turbines | Steam Turbines | ASME | ASME PTC 6-2004 (RA14) |
| | Steam Turbines in Combined Cycle | ASME | ASME PTC 6.2-2011 |
| | Hydraulic Turbines and Pump-Turbines | ASME | ASME PTC 18-2011 |
| | Gas Turbines | ASME | ASME PTC 22-2014 |
| | Wind Turbines | ASME | ASME PTC 42-1988 (RA04) |
| | Specification for Stainless Steel Bars for Compressor and Turbine Airfoils | ASTM | ASTM A1028-03 (2009) |
| | Specification for Gas Turbine Fuel Oils | ASTM | ASTM D2880-14a |
| | Steam Turbines for Mechanical Drive Service | NEMA | NEMA SM 23-1991 (R2002) |
| | Land Based Steam Turbine Generator Sets, 0 to 33 000 kW | NEMA | NEMA SM 24-1991 (R2002) |
| Valves | Face-to-Face and End-to-End Dimensions of Valves | ASME | ASME B16.10-2009 |
| | Valves—Flanged, Threaded, and Welding End | ASME | ASME B16.34-2013 |
| | Manually Operated Metallic Gas Valves for Use in Aboveground Piping Systems up to 5 psi | ASME | ASME B16.44-2012 |
| | Pressure Relief Devices | ASME | ASME PTC 25-2014 |
| | Methods of Testing Capacity of Refrigerant Solenoid Valves | ASHRAE | ANSI/ASHRAE 158.1-2012 |
| | Relief Valves for Hot Water Supply | CSA | ANSI Z21.22-1999/CSA 4.4-1999 (R2014) |
| | Control Valve Capacity Test Procedures | ISA | ANSI/ISA-S75.02.01-2008 |
| | Metal Valves for Use in Flanged Pipe Systems—Face-to-Face and Centre-to-Face Dimensions | ISO | ISO 5752:1982 |
| | Safety Valves for Protection Against Excessive Pressure, Part 1: Safety Valves | ISO | ISO 4126-1:2013 |
| | Oxygen System Fill/Check Valve | SAE | SAE AS1225A-1997 (R2012) |
| | Flow Control Valves for Anhydrous Ammonia and LP-Gas | UL | ANSI/UL 125-2014 |
| | Safety Relief Valves for Anhydrous Ammonia and LP-Gas | UL | ANSI/UL 132-2007 |
| | LP-Gas Regulators | UL | ANSI/UL 144-2012 |
| | Electrically Operated Valves | UL | UL 429-2013 |
| | Valves for Flammable Fluids | UL | ANSI/UL 842-2007 |
| Gas | Manually Operated Metallic Gas Valves for Use in Gas Piping Systems up to 125 psig (Sizes NPS 1/2 through 2) | ASME | ASME B16.33-2012 |
| | Large Metallic Valves for Gas Distribution (Manually Operated, NPS-2 1/2 to 12, 125 psig Maximum) | ASME | ANSI/ASME B16.38-2012 |
| | Manually Operated Thermoplastic Gas Shutoffs and Valves in Gas Distribution Systems | ASME | ASME B16.40-2013 |

Selected Codes and Standards Published by Various Societies and Associations (Continued)

| Subject | Title | Publisher | Reference |
|-------------------------|-----------------------------------------------------------------------------------------------|-------------|-----------------------------------------|
| | Manually Operated Gas Valves for Appliances, Appliance Connection Valves, and Hose End Valves | CSA | ANSI Z21.15-2009/CGA 9.1-2009 (R2014) |
| | Automatic Valves for Gas Appliances | CSA | ANSI Z21.21-2012/CGA 6.5-2012 |
| | Combination Gas Controls for Gas Appliances | CSA | ANSI Z21.78-2010/CGA 6.20-2010 |
| | Convenience Gas Outlets and Optional Enclosures | CSA | ANSI Z21.90-2001/CSA 6.24-2001 (R2011) |
| Refrigerant | Thermostatic Refrigerant Expansion Valves | AHRI | ANSI/AHRI 750-2007 |
| | Solenoid Valves for Use with Volatile Refrigerants | AHRI | ANSI/AHRI 760-2014 |
| | Refrigerant Pressure Regulating Valves | AHRI | ANSI/AHRI 770-2014 |
| | Method of Testing Thermostatic Refrigerant Expansion Valves | ASHRAE | ANSI/ASHRAE 17-2008 |
| | Methods of Testing Capacity of Refrigerant Solenoid Valves | ASHRAE | ANSI/ASHRAE 158.1-2012 |
| Vapor Retarders | Practice for Selection of Water Vapor Retarders for Thermal Insulation | ASTM | ASTM C755-10 |
| | Practice for Determining the Properties of Jacketing Materials for Thermal Insulation | ASTM | ASTM C921-10 |
| | Specification for Flexible, Low Permeance Vapor Retarders for Thermal Insulation | ASTM | ASTM C1136-12 |
| Vending Machines | Methods of Testing for Rating Vending Machines for Sealed Beverages | ASHRAE | ANSI/ASHRAE 32.1-2010 |
| | Methods of Testing for Rating Pre-Mix and Post-Mix Beverage Dispensing Equipment | ASHRAE | ANSI/ASHRAE 32.2-2003 (RA11) |
| | Vending Machines | CSA | C22.2 No. 128-95 (R2013) |
| | Energy Performance of Vending Machines | CSA | CAN/CSA C804-09 (R2014) |
| | Vending Machines for Food and Beverages | NSF | ANSI/NSF 25-2012 |
| | Refrigerated Vending Machines | UL | ANSI/UL 541-2011 |
| | Vending Machines | UL | ANSI/UL 751-2012 |
| Vent Dampers | Automatic Vent Damper Devices for Use with Gas-Fired Appliances | CSA | ANSI Z21.66-1996/CSA 6.14-M96 (R2011) |
| | Vent or Chimney Connector Dampers for Oil-Fired Appliances | UL | ANSI/UL 17-2008 |
| Ventilation | Commercial Systems Overview | ACCA | ACCA Manual CS |
| | Commercial Low Pressure, Low Velocity Duct System Design | ACCA | ACCA Manual Q |
| | Comfort, Air Quality, and Efficiency by Design | ACCA | ACCA Manual RS |
| | Guide for Testing Ventilation Systems (1991) | ACGIH | ACGIH |
| | Industrial Ventilation: A Manual of Recommended Practice, 28th ed. (2013) | ACGIH | ACGIH |
| | Design of Ventilation Systems for Poultry and Livestock Shelters | ASABE | ASAE EP270.5-1986 (R2012) |
| | Design Values for Emergency Ventilation and Care of Livestock and Poultry | ASABE | ANSI/ASAE EP282.2-1993 (R2013) |
| | Heating, Ventilating and Cooling Greenhouses | ASABE | ANSI/ASAE EP406.4-2003 (R2008) |
| | Guidelines for Selection of Energy Efficient Agricultural Ventilation Fans | ASABE | ASAE EP566.2-2012 |
| | Uniform Terminology for Livestock Production Facilities | ASABE | ASAE S501-1990 (R2011) |
| | Agricultural Ventilation Constant Speed Fan Test Standard | ASABE | ASABE S565-2005 (R2011) |
| | Guide for the Ventilation and Thermal Management of Batteries for Stationary Applications | ASHRAE/IEEE | ASHRAE Guideline 21-2012/IEEE 1635-2012 |
| | Ventilation for Acceptable Indoor Air Quality | ASHRAE | ANSI/ASHRAE 62.1-2013 |
| | Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings | ASHRAE | ANSI/ASHRAE 62.2-2013 |
| | Method of Testing for Room Air Diffusion | ASHRAE | ANSI/ASHRAE 113-2013 |
| | Measuring Air Change Effectiveness | ASHRAE | ANSI/ASHRAE 129-1997 (RA02) |
| | Ventilation for Commercial Cooking Operations | ASHRAE | ANSI/ASHRAE 154-2011 |
| | Ventilation of Health Care Facilities | ASHRAE/ASHE | ANSI/ASHRAE/ASHE 170-2013 |
| | Residential Mechanical Ventilation Systems | CSA | CAN/CSA F326-M91 (R2010) |
| | Parking Structures | NFPA | NFPA 88A-2015 |
| | Installation of Air-Conditioning and Ventilating Systems | NFPA | NFPA 90A-2015 |
| | Ventilation Control and Fire Protection of Commercial Cooking Operations | NFPA | NFPA 96-2014 |
| | Food Equipment | NSF | ANSI/NSF 2-2014 |
| | Biosafety Cabinetry: Design, Construction, Performance, and Field Certification | NSF | ANSI/NSF 49-2012 |
| | Aerothermodynamic Systems Engineering and Design | SAE | SAE AIR1168/3-1989 (R2011) |
| | Heater, Airplane, Engine Exhaust Gas to Air Heat Exchanger Type | SAE | SAE ARP86-2011 |
| | Test Procedure for Battery Flame Retardant Venting Systems | SAE | SAE J1495-2013 |
| Venting | Commercial Systems Overview | ACCA | ACCA Manual CS |
| | Draft Hoods | CSA | ANSI Z21.12-1990 (R2000) |
| | National Fuel Gas Code | AGA/NFPA | ANSI Z223.1/NFPA 54-2015 |
| | Explosion Prevention Systems | NFPA | NFPA 69-2014 |
| | Smoke and Heat Venting | NFPA | NFPA 204-2015 |
| | Chimneys, Fireplaces, Vents and Solid Fuel-Burning Appliances | NFPA | NFPA 211-2013 |
| | Guide for Free Standing Steel Stack Construction, 2nd ed. | SMACNA | SMACNA 2011 |
| | Guyed Steel Stacks | SMACNA | SMACNA 2011 |
| | Draft Equipment | UL | UL 378-2006 |

Selected Codes and Standards Published by Various Societies and Associations (Continued)

| Subject | Title | Publisher | Reference |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------|
| | Gas Vents | UL | ANSI/UL 441-2010 |
| | Type L Low-Temperature Venting Systems | UL | ANSI/UL 641-2010 |
| Vibration | Balance Quality and Vibration Levels for Fans | AMCA | ANSI/AMCA 204-05 (R2012) |
| | Techniques of Machinery Vibration Measurement | ASA | ANSI/ASA S2.17-1980 (R2004) |
| | Mechanical Vibration and Shock—Resilient Mounting Systems—Part 1: Technical Information to Be Exchanged for the Application of Isolation Systems | ISO | ISO 2017-1:2005 |
| | Evaluation of Human Exposure to Whole-Body Vibration—Part 2: Vibration in Buildings (1 Hz to 80 Hz) | ISO | ISO 2631-2:2003 |
| | Guidelines for the Evaluation of the Response of Occupants of Fixed Structures, Especially Buildings and Off-Shore Structures, to Low-Frequency Horizontal Motion (0.063 to 1 Hz) | ISO | ISO 6897:1984 |
| | Procedural Standards for the Measurement of Sound and Vibration, 2nd ed. (2006) | NEBB | NEBB |
| | HVAC Systems Sound and Vibration Procedural Guide, 1st ed. | SMACNA | SMACNA 2013 |
| Water Heaters | Desuperheater/Water Heaters | AHRI | ANSI/AHRI 470-2006 |
| | Safety for Electrically Heated Livestock Waterers | ASABE | ASAE EP342.3-2010 |
| | Methods of Testing to Determine the Thermal Performance of Solar Domestic Water Heating Systems | ASHRAE | ANSI/ASHRAE 95-1981 (RA87) |
| | Method of Testing for Rating Commercial Gas, Electric, and Oil Service Water Heating Equipment | ASHRAE | ANSI/ASHRAE 118.1-2012 |
| | Method of Testing for Rating Residential Water Heaters | ASHRAE | ANSI/ASHRAE 118.2-2006 |
| | Methods of Testing for Rating Combination Space-Heating and Water-Heating Appliances | ASHRAE | ANSI/ASHRAE 124-2007 |
| | Methods of Testing for Efficiency of Space-Conditioning/Water-Heating Appliances That Include a Desuperheater Water Heater | ASHRAE | ANSI/ASHRAE 137-2013 |
| | Method of Testing Absorption Water-Chilling and Water-Heating Packages | ASHRAE | ANSI/ASHRAE 182-2008 (RA13) |
| | Boiler and Pressure Vessel Code—Section IV: Heating Boilers | ASME | BPVC-2015 |
| | Section VI: Recommended Rules for the Care and Operation of Heating Boilers | ASME | BPVC-2015 |
| | Gas Water Heaters—Vol. I: Storage Water Heaters with Input Ratings of 75,000 Btu per Hour or Less | CSA | ANSI Z21.10.1-2014/CSA 4.1-2014 |
| | Vol. III: Storage Water Heaters with Input Ratings Above 75,000 Btu per Hour, Circulating and Instantaneous | CSA | ANSI Z21.10.3-2014/CSA 4.3-2014 |
| | Oil Burning Stoves and Water Heaters | CSA | B140.3-1962 (R2011) |
| | Oil-Fired Service Water Heaters and Swimming Pool Heaters | CSA | B140.12-03 (R2013) |
| | Construction and Test of Electric Storage-Tank Water Heaters | CSA | CAN/CSA-C22.2 No. 110-94 (R2014) |
| | Performance of Electric Storage Tank Water Heaters for Domestic Hot Water Service | CSA | CSA C191-13 |
| | Energy Efficiency of Electric Storage Tank Water Heaters and Heat Pump Water Heaters | CSA | CSA C745-03 (R2014) |
| | Water Heaters, Hot Water Supply Boilers, and Heat Recovery Equipment | NSF | ANSI/NSF 5-2012 |
| | Household Electric Storage Tank Water Heaters | UL | ANSI/UL 174-2004 |
| | Oil-Fired Storage Tank Water Heaters | UL | ANSI/UL 732-1995 |
| | Commercial-Industrial Gas Heating Equipment | UL | UL 795-2011 |
| | Electric Booster and Commercial Storage Tank Water Heaters | UL | ANSI/UL 1453-2004 |
| Welding and Brazing | Boiler and Pressure Vessel Code—Section IX: Welding and Brazing Qualifications | ASME | BPVC-2015 |
| | Structural Welding Code—Steel | AWS | AWS D1.1M/D1.1:2010 |
| | Specification for Welding of Austenitic Stainless Steel Tube and Piping Systems in Sanitary Applications | AWS | AWS D18.1:2009 |
| Wood-Burning Appliances | Threshold Limit Values for Chemical Substances (updated annually) | ACGIH | ACGIH |
| | Specification for Room Heaters, Pellet Fuel Burning Type | ASTM | ASTM E1509-12 |
| | Guide for Construction of Solid Fuel Burning Masonry Heaters | ASTM | ASTM E1602-03 (2010)e1 |
| | Installation Code for Solid-Fuel-Burning Appliances and Equipment | CSA | CAN/CSA-B365-10 |
| | Solid-Fuel-Fired Central Heating Appliances | CSA | CAN/CSA-B366.1-11 |
| | Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances | NFPA | ANSI/NFPA 211-2013 |
| | Commercial Cooking, Rethermalization and Powered Hot Food Holding and Transport Equipment | NSF | ANSI/NSF 4-2014 |

ORGANIZATIONS

| Abbrev. | Organization | Address | Telephone | http://www. |
|---------|---------------------------------------------------------------------------|----------------------------------------------------------------|-------------------|------------------------------------------------------------------|
| AABC | Associated Air Balance Council | 1518 K Street NW, Suite 503 Washington, D.C. 20005 | (202) 737-0202 | aabc.com |
| ABMA | American Boiler Manufacturers Association | 8221 Old Courthouse Road, Suite 202 Vienna, VA 22182 | (703) 356-7172 | abma.com |
| ACCA | Air Conditioning Contractors of America | 2800 S. Shirlington Road, Suite 300 Arlington, VA 22206 | (703) 575-4477 | acca.org |
| ACGIH | American Conference of Governmental Industrial Hygienists | 1330 Kemper Meadow Drive Cincinnati, OH 45240 | (513) 742-2020 | acgih.org |
| ADC | Air Diffusion Council | 1901 N. Roselle Road, Suite 800 Schaumburg, IL 60195 | (847) 706-6750 | flexibleduct.org |
| AGA | American Gas Association | 400 N. Capitol Street NW Washington, D.C. 20001 | (202) 824-7000 | aga.org |
| AHAM | Association of Home Appliance Manufacturers | 1111 19th Street NW, Suite 402 Washington, D.C. 20036 | (202) 872-5955 | aham.org |
| AIHA | American Industrial Hygiene Association | 3141 Fairview Park Dr, Suite 777 Falls Church, VA 22042 | (703) 207-3561 | aiha.org |
| AMCA | Air Movement and Control Association International | 30 West University Drive Arlington Heights, IL 60004 | (847) 394-0150 | amca.org |
| ANSI | American National Standards Institute | 1899 L Street NW, 11th Floor Washington, D.C. 20036 | (202) 293-8020 | ansi.org |
| AHRI | Air-Conditioning, Heating, and Refrigeration Institute | 2111 Wilson Boulevard, Suite 500 Arlington, VA 22201 | (703) 524-8800 | ahrinet.org |
| ASA | Acoustical Society of America | 1305 Walt Whitman Road, Suite 300 Melville, NY 11747-4502 | (516) 576-2360 | acousticalsociety.org |
| ASABE | American Society of Agricultural and Biological Engineers | 2950 Niles Road St. Joseph, MI 49085 | (269) 429-0300 | asabe.org |
| ASHRAE | American Society of Heating, Refrigerating and Air-Conditioning Engineers | 1791 Tullie Circle, NE Atlanta, GA 30329 | (404) 636-8400 | ashrae.org |
| ASME | American Society of Mechanical Engineers | Two Park Avenue New York, NY 10016-5990 | (973) 882-1170 | asme.org |
| ASTM | ASTM International | 100 Barr Harbor Drive West Conshohocken, PA 19428-2959 | (610) 832-9585 | astm.org |
| AWS | American Welding Society | 8669 NW 36 Street, #130 Miami, FL 33166 | (305) 443-9353 | aws.org |
| AWWA | American Water Works Association | 6666 W. Quincy Avenue Denver, CO 80235 | (303) 794-7711 | awwa.org |
| BOCA | Building Officials and Code Administrators International | (see ICC) | | |
| BSI | British Standards Institution | 389 Chiswick High Road London W4 4AL, UK | 44(0)20-8996-9001 | bsigroup.com |
| CAGI | Compressed Air and Gas Institute | 1300 Sumner Avenue Cleveland, OH 44115 | (216) 241-7333 | cagi.org |
| CSA | Canadian Standards Association International | 178 Rexdale Boulevard Toronto, ON M9W 1R3, Canada | (416) 747-4000 | csagroup.org |
| CTI | Cooling Technology Institute | P.O. Box 681807 Houston, TX 77268 | (281) 583-4087 | cti.org |
| EJMA | Expansion Joint Manufacturers Association | 25 North Broadway Tarrytown, NY 10591 | (914) 332-0040 | ejma.org |
| HEI | Heat Exchange Institute | 1300 Sumner Avenue Cleveland, OH 44115 | (216) 241-7333 | heatexchange.org |
| HI | Hydraulic Institute | 6 Campus Drive, First Floor North Parsippany, NJ 07054-4406 | (973) 267-9700 | pumps.org |
| HYDI | Hydronics Institute Division of AHRI | (see AHRI) | | |
| IAPMO | International Association of Plumbing and Mechanical Officials | 4755 E. Philadelphia Street Ontario, CA 91761 | (909) 472-4100 | iapmo.org |
| ICBO | International Conference of Building Officials | (see ICC) | | |

ORGANIZATIONS (Continued)

| Abbrev. | Organization | Address | Telephone | http://www. |
|---------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------|------------------------------------------------------------|
| ICC | International Code Council | 500 New Jersey Ave NW, 6th Floor Washington, D.C. 20001 | (888) 422-7233 | iccsafe.org |
| IEEE | Institute of Electrical and Electronics Engineers | 3 Park Avenue, 17th Floor New York, NY 10016-5997 | (732) 981-0060 | ieee.org |
| IES | Illuminating Engineering Society | 120 Wall Street, Floor 17 New York, NY 10005-4001 | (212) 248-5000 | ies.org |
| IFCI | International Fire Code Institute | (see ICC) | | |
| IIAR | International Institute of Ammonia Refrigeration | 1001 N. Fairfax St, Suite 503 Alexandria, VA 22314 | (703) 312-4200 | iiar.org |
| ISA | International Society of Automation | 67 T.W. Alexander Drive, P.O. Box 12277 Research Triangle Park, NC 27709 | (919) 549-8411 | isa.org |
| ISO | International Organization for Standardization | Chemin de Blandonnet 8, CP 401 1214 Vernier, Geneva, Switzerland | 41 22 749 01 11 | iso.org |
| MCAA | Mechanical Contractors Association of America | 1385 Piccard Drive Rockville, MD 20850 | (301) 869-5800 | mcaa.org |
| MICA | Midwest Insulation Contractors Association | 16712 Elm Circle Omaha, NE 68130 | (402) 342-3463 | micainsulation.org |
| MSS | Manufacturers Standardization Society of the Valve and Fittings Industry | 127 Park Street NE Vienna, VA 22180-4602 | (703) 281-6613 | mss-hq.com |
| NAIMA | North American Insulation Manufacturers Association | 11 Canal Center Plaza, Suite 103 Alexandria, VA 22314 | (703) 684-0084 | naima.org |
| NCPWB | National Certified Pipe Welding Bureau | 1385 Piccard Drive Rockville, MD 20850 | (301) 869-5800 | mcaa.org/ncpwb |
| NEBB | National Environmental Balancing Bureau | 8575 Grovemont Circle Gaithersburg, MD 20877 | (301) 977-3698 | nebb.org |
| NEMA | Association of Electrical and Medical Imaging Equipment Manufacturers | 1300 North 17th Street, Suite 900 Arlington, VA 22209 | (703) 841-3200 | nema.org |
| NFPA | National Fire Protection Association | 1 Batterymarch Park Quincy, MA 02169-7471 | (617) 770-3000 | nfpa.org |
| NRCC | National Research Council of Canada, Institute for Research in Construction | 1200 Montreal Road, Bldg M-58 Ottawa, ON K1A 0R6, Canada | (613) 993-9101 | nrc-cnrc.ca |
| NSF | NSF International | P.O. Box 130140, 789 N. Dixboro Road Ann Arbor, MI 48105 | (734) 769-8010 | nsf.org |
| PHCC | Plumbing-Heating-Cooling Contractors Association | 180 S. Washington Street, Suite 100 Falls Church, VA 22046 | (703) 237-8100 | phccweb.org |
| SAE | SAE International | 400 Commonwealth Drive Warrendale, PA 15096 | (724) 776-4841 | sae.org |
| SBCCI | Southern Building Code Congress International | (see ICC) | | |
| SMACNA | Sheet Metal and Air Conditioning Contractors' National Association | 4201 Lafayette Center Drive Chantilly, VA 20151-1219 | (703) 803-2980 | smacna.org |
| TEMA | Tubular Exchanger Manufacturers Association | 25 North Broadway Tarrytown, NY 10591 | (914) 332-0040 | tema.org |
| UL | Underwriters Laboratories | 333 Pfingsten Road Northbrook, IL 60062-2096 | (847) 272-8800 | ul.com |
| USGBC | U.S. Green Building Council | 2101 L Street NW, Suite 500 Washington, D.C. 20037 | (202) 742-3792 | usgbc.org |