ADDENDA

ANSI/ASHRAE/IES Addendum co to
ANSI/ASHRAE/IES Standard 90.1-2013

Energy Standard for Buildings Except Low-Rise Residential Buildings

Approved by the ASHRAE Standards Committee on June 25, 2016; by the ASHRAE Technology Council on June 29, 2016; by the IES Board of Directors on June 27, 2016; and by the American National Standards Institute on June 30, 2016.

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FOREWORD

This addendum updates these normative references to those versions to be used in the 2016 standard, adds new references that exist in the standard but are not currently listed in Section 12, and deletes references no longer used in the standard.

This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes.

Addendum co to 90.1-2013

Modify the standard as follows (I-P and SI):

12. NORMATIVE REFERENCES

Reference	Title
Air Conditioning, Heating and Refrigeration Institute (AHRI) 2111 Wilson Blvd., Suite 500, Arlington, VA 22201	
AHRI 210/240-2008 with Addendum 1 and 2	Unitary Air Conditioning and Air-Source Heat Pump Equipment
AHRI 310/380-2004	Packaged Terminal Air-Conditioners and Heat Pumps
AHRI 340/360-~~2007 with Addenda 1 and~~2015 (I-P) and AHRI 341/361 – 2015 (SI)	Performance Rating of Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment
AHRI 365-2009	Commercial and Industrial Unitary Air-Conditioning Condensing Units
AHRI 390-2003	Performance Rating of Single Packaged Vertical Air-Conditioners and Heat Pumps
AHRI 400-~~2001~~ 2015 ~~with Addendum 2~~	Performance Rating of Liquid-to-Liquid Heat Exchangers
AHRI 460-2005	Remote Mechanical Draft Air Cooled Refrigerant Condensers
AHRI 550/590-~~2011~~2015 (I-P) ~~with Addendum 1~~ and AHRI 551/591-2015 (SI)	Performance Rating of Water-Chilling and Heat-Pump Water-Heating Packages Using the Vapor Compression Cycle
AHRI 560-2000	Absorption Water Chilling and Water Heating Packages
AHRI 1160-2009	Performance Rating of Heat Pump Pool Heaters
AHRI 1200-~~2010~~2013	Performance Rating of Commercial Refrigerated Display Merchandisers and Storage Cabinets
AHRI 1230-2010 with Addendum 1	Performance Rating of Variable Refrigerant Flow (VRF) Multi-split Air-Conditioning and Heat Pump Equipment
BTS 2000	Testing Standard Method to Determine Efficiency of Commercial Space Heating Boilers

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

AMCA 205-12	Energy Efficiency Classification for Fans
~~ANSI/~~AMCA ~~STD~~ 500-D-12	Laboratory Methods of Testing Dampers for Rating

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

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

Window and Door Manufacturers Association (WDMA)
2025 M Street, NW, Washington, DC 20036

AAMA/WDMA/CSA 101/I.S.2/A440-~~08~~11	~~Standard/Specification for Windows, Doors, and Unit Skylights~~ NAFS-North American Fenestration Standard/Specification for windows, doors, and skylights

American National Standards Institute (ANSI),
11 West 42nd Street, New York, NY 10036

ANSI Z21.10.3-2011	Gas Water Heater, Volume 3, Storage, with Input Ratings above 75,000 Btu/h, Circulating and Instantaneous Water Heaters
ANSI Z21.47-2012/CSA 2.3-2012	Gas-Fired Central Furnaces
ANSI Z83.8-~~2009~~-2013/CSA 2.6-2013	Gas Unit Heaters and Duct Furnaces

American Society of Mechanical Engineers (ASME)
Three Park Avenue, New York, NY 10016-5990

ASME A17.1-~~2010~~2013/CSA B44-~~10~~13	Safety Code for Elevators and Escalators

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1791 Tullie Circle, NE, Atlanta, GA 30329

ANSI/ASHRAE/ASHE Standard 170-2013	Ventilation of Health Care Facilities
ANSI/ASHRAE/IESNA Standard 90.1-2007	Energy Standard for Buildings Except Low-Rise Residential Buildings
ANSI/ASHRAE/ACCA Standard 183-2007(RA 2014)	Peak Cooling and Heating Load Calculations in Buildings Except Low-Rise Residential Buildings
ANSI/ASHRAE Standard 62.1-~~2007~~-2013	Ventilation for Acceptable Indoor Air Quality
ANSI/ASHRAE/IES Standard 90.1-2010	Energy Standard for Buildings Except Low-Rise Residential Buildings
ANSI/ASHRAE/IES Standard 90.1-2013	Energy Standard for Buildings Except Low-Rise Residential Buildings
ANSI/ASHRAE Standard 127-~~2007~~-2012	Method of Testing for Rating Computer and Data Processing Room Unitary Air Conditioners
ANSI/ASHRAE Standard 140-~~2011~~ 2014	Standard Method of Test for the Evaluation of Building Energy Analysis Computer Programs

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ANSI/ASHRAE Standard 154~~-2003~~-2011	Ventilation for Commercial Cooking Operations
~~Briggs, R.S., R.G. Lucas, and Z.T. Taylor. 2003~~ANSI/ASHRAE Standard 169-2013	~~Climate classification for building energy codes and standards: Part 1—Development process~~ Climatic Data for Building Design Standards
ANSI/ASHRAE Standard 55-~~2010~~-2013	Thermal Environmental Conditions for Human Occupancy

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

ANSI/AHAM HRF-1-2008	Energy and Internal Volume of Refrigerating Appliances (including errata issued November 17, 2009)
ANSI/AHAM RAC-1-R2008	Room Air Conditioners

ASTM International
100 Barr Harbor Dr., West Conshohocken, PA 19428-2959

ASTM C90-~~03~~14	Standard Specification for Loadbearing Concrete Masonry Units
ASTM C177-~~97~~13	Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmittance Properties by Means of the Guarded-Hot-Plate Apparatus
ASTM C272-~~01~~/C272M-12	Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions
ASTM C518-~~04~~10	Standard Test Method for Steady-State Thermal Transmittance Properties by Means of the Heat Flow Meter Apparatus
ASTM C835-~~01~~06 (2013) e1	Standard Test Method for Total Hemispherical Emittance of Surfaces up ~~From 20°C~~ to 1400°C
ASTM C1363-~~97~~11	Standard Test Method for the Thermal Performance of Building Assemblies by Means of a Hot Box Apparatus
ASTM D1003-~~00~~13	Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics
ASTM E283-04 (2012)	Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
ASTM E779-10	Standard Test Method for Determining Air Leakage Rate by Fan Pressurization
ASTM E972-96 ~~(2002)~~ (2013)	Standard Test Method for Solar Photometric Transmittance of Sheet Materials Using Sunlight
~~ASTM E1175-87 (2003)~~	~~Standard Test Method for Determining Solar or Photopic Reflectance, Transmittance, and Absorptance of Materials Using a Large Diameter Integrating Sphere~~
ASTM E1677-~~2005~~ 11	Standard Specification for an Air Retarder (AR) Material or System for Low-Rise Framed Building Walls
ASTM E1680-~~95 (2003)~~11	Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems

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~~ASTM E1918 (2006)~~	~~Standard Test Method for Measuring Solar Reflectance of Horizontal or Low-Sloped Surfaces in the Field~~
ASTM E1980 ~~(2001)~~ 11	Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low Sloped Opaque Surfaces
ASTM E2178-~~03~~ 13	Standard Test Method for Air Permeance of Building Materials
ASTM E2357-~~05~~11	Standard Test Method for Determining Air Leakage of Air Barrier Assemblies

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

~~AAMA/WDMA/CSA 101/I.S.2/A440-08~~11	~~Standard/Specification for Windows, Doors, and Unit Skylights~~

Cool Roof Rating Council (CRRC)
1610 Harrison Street, Oakland, CA 94612

ANSI/CRRC-1 Standard-2012	Cool Roof Rating Council—ANSI/CRRC-1 Standard

Cooling Technology Institute (CTI)
2611 FM 1960 West, Suite A-101, Houston, TX 77068-3730; P.O. Box 73383, Houston, TX 77273-3383

CTI ATC-105 (00)	Acceptance Test Code for Water Cooling Towers
CTI ATC-105S (11)	Acceptance Test Code for Closed-Circuit Cooling Towers
CTI ATC-106 (11)	Acceptance Test Code for Mechanical Draft Evaporative Vapor Condensers
CTI STD-201 -RS (~~13~~15)	Performance Rating of Evaporative Heat Rejection Equipment

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

ANSI/DASMA 105-~~92 (R 1998)~~-2012	Test Method for Thermal Transmittance and Air Infiltration of Garage Doors

Illuminating Engineering Society (IES)
120 Wall street, Floor 17, New York, NY 10005-4001

ANSI/IES RP-28-2007	Lighting and the Visual Environment for Senior Living

International Organization for Standardization (ISO) ISO Central Secretariat BIBC II
Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland

~~1, rue de Varembe, Case postale 56, CH-1211 Geneve 20, Switzerland~~

ANSI/AHRI/ASHRAE/ISO 13256-1:1998-(R-2012)	Water-Source Heat Pumps—Testing and Rating for Performance—Part 1: Water-to-Air and Brine-to-Air Heat Pumps
ANSI/AHRI/ASHRAE/ISO 13256-2:1998-(R-2012)~~ISO 13256-2 (1998)~~	Water-Source Heat Pumps—Testing and Rating for Performance—Part 2: Water-to-Water and Brine-to-Water Heat Pumps

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National Electrical Manufacturers Association (NEMA) **1300 N. 17th Street, Suite 1847, Rosslyn, VA 22209**	
ANSI/NEMA MG 1-~~2006~~ 2009	Motors and Generators
National Fenestration Rating Council (NFRC) **6305 Ivy Lane, Suite 140, Greenbelt, MD 20770-6323**	
ANSI/NFRC 100-~~2010~~2014	Procedure for Determining Fenestration Product U-Factors
ANSI/NFRC 200-~~2010~~2014	Procedure for Determining Fenestration Product Solar Heat Gain Coefficients and Visible Transmittance at Normal Incidence
NFRC 300-~~2010~~2014	Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems
NFRC 301-~~2010~~2014	Test Method for Emittance of Specular Surfaces Using Spectrometric Measurements
ANSI/NFRC 400-~~2010~~2014	Procedure for Determining Fenestration Product Air Leakage
National Fire Protection Association (NFPA) **1 Battery March Park, P.O. Box 9101, Quincy, MA 02269-9101**	
~~ANSI/~~NFPA 70-~~2008~~ 2014	National Electric Code
~~NFPA 70 Article 708 2011~~	~~Critical Operations Power Systems (COPS)~~
NFPA 96-~~12~~ 2014	Ventilation Control and Fire Protection of Commercial Cooking Operations
Telecommunications Industry Association (TIA) **2500 Wilson Boluevard, Arlington, VA 22201**	
ANSI/TIA-942-REV A, March 2005~~2014~~	Telecommunication Infrastructure Standard for Data Centers
Underwriters Laboratories, Inc. (UL) **333 Pfingsten Rd., Northbrook, IL 60062**	
UL 181A-~~2005~~ 2013	Closure Systems for Use with Rigid Air Ducts and Air Connectors
UL 181B-~~2005~~ 2013	Closure Systems for Use with Flexible Air Ducts and Air Connectors
UL 727-06	UL Standard for Safety—Oil Fired Central Furnaces
UL 731-~~12~~ 2012	UL Standard for Safety—Oil-Fired Unit Heaters
U.S. Department of Energy (DOE) **1000 Independence Avenue, SW, Washington, DC 20585**	
10 CFR Part 430, App N	Uniform Test Method for Measuring the Energy Consumption of Furnaces
10 CFR 431 Subpart K, App A	Uniform Test Method for Measuring the Energy Consumption of Distribution Transformers
10 CFR Part 431, Subpart B, App B	Uniform Test Method for Measuring Nominal Full-Load Efficiency of Electric Motors
42 USC 6831, et seq., Public Law 102-486	Energy Policy Act of 1992, EPACT 2005, and EISA 2007

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U.S. Security and Exchange Commission (SEC)
100 F Street, NE, Washington, DC 2-549

The Interagency Paper on Sound Practices to Strengthen the Resilience of the US Financial System	The Interagency Paper on Sound Practices to Strengthen the Resilience of the US Financial System, April 7, 2003

~~**Window and Door Manufacturers Association (WDMA)**~~
~~**2025 M Street, NW, Washington, DC 20036**~~

~~AAMA/WDMA/CSA 101/I.S.2/A440-08~~	~~North American Fenestration Standard/Specification for Windows, Doors, and Skylights~~

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ASHRAE is concerned with the impact of its members' activities on both the indoor and outdoor environment. ASHRAE's members will strive to minimize any possible deleterious effect on the indoor and outdoor environment of the systems and components in their responsibility while maximizing the beneficial effects these systems provide, consistent with accepted Standards and the practical state of the art.

ASHRAE's short-range goal is to ensure that the systems and components within its scope do not impact the indoor and outdoor environment to a greater extent than specified by the Standards and Guidelines as established by itself and other responsible bodies.

As an ongoing goal, ASHRAE will, through its Standards Committee and extensive Technical Committee structure, continue to generate up-to-date Standards and Guidelines where appropriate and adopt, recommend, and promote those new and revised Standards developed by other responsible organizations.

Through its *Handbook*, appropriate chapters will contain up-to-date Standards and design considerations as the material is systematically revised.

ASHRAE will take the lead with respect to dissemination of environmental information of its primary interest and will seek out and disseminate information from other responsible organizations that is pertinent, as guides to updating Standards and Guidelines.

The effects of the design and selection of equipment and systems will be considered within the scope of the system's intended use and expected misuse. The disposal of hazardous materials, if any, will also be considered.

ASHRAE's primary concern for environmental impact will be at the site where equipment within ASHRAE's scope operates. However, energy source selection and the possible environmental impact due to the energy source and energy transportation will be considered where possible. Recommendations concerning energy source selection should be made by its members.

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