

ADDENDA

**ANSI/ASHRAE/IES Addendum cd to
ANSI/ASHRAE/IES Standard 90.1-2022**

Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings

Approved by ASHRAE and the American National Standards Institute on May 30, 2025; and by the Illuminating Engineering Society on May 16, 2025.

This addendum was approved by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for regular publication of addenda or revisions, including procedures for timely, documented, consensus action on requests for change to any part of the standard. Instructions for how to submit a change can be found on the ASHRAE® website (<https://www.ashrae.org/continuous-maintenance>).

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FOREWORD

Addendum cd edits are the result of the Format and Compliance team's review of initialisms and acronyms. Note, if an initialism or acronym only exists in formula and is described in the formula, that term is excluded from the list unless used in more than one location in the standard.

Informative Note: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~strike through~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

Addendum cd to Standard 90.1-2022

Modify the standard as shown (I-P and SI).

3.3 Abbreviations and Acronyms

<u>AAMA</u>	<u>American Architectural Manufacturers Association</u>
ac	alternating current
<u>ACCA</u>	<u>Air Conditioning Contractors Association</u>
ach	air changes per hour
AFUE	annual fuel utilization efficiency
AHAM	Association of Home Appliance Manufacturers
AHRI	Air-Conditioning, Heating and Refrigeration Institute
<u>AISI</u>	<u>American Iron and Steel Institute</u>
AMCA	Air Movement Control Association
<u>ANSI</u>	<u>American National Standards Institute</u>
<u>ASABE</u>	<u>American Society of Agricultural and Biological Engineers</u>
ASTM	ASTM International
<u>AVIXA</u>	<u>Audiovisual and Integrated Experience Association</u>
BAS	building automation system
BEP	best efficiency point
<u>BMS</u>	<u>building management system</u>
BSR	Board of Standards Review
Btu	British thermal unit
Btu/ft ² ·°F	British thermal unit per square foot per degree Fahrenheit Btu/h·ft ²
Btu/h	British thermal unit per hour
Btu/h·ft·°F	British thermal unit per hour per linear foot per degree Fahrenheit
<u>CAN</u>	<u>Canada</u>
<i>CDD</i>	<i>cooling degree-day</i>
<i>CDD50</i>	<i>cooling degree-days base 50°F</i>
<i>CEER</i>	<i>combined energy efficiency ratio</i>
<i>CFEI</i>	<i>ceiling fan energy index</i>
cfm	cubic feet per minute
CHW	chilled water
CHWST	chilled-water supply temperature
<i>c.i.</i>	<i>continuous insulation</i>
<u>CMU</u>	<u>concrete masonry unit</u>
<i>COP</i>	<i>coefficient of performance</i>
<i>COP_H</i>	<i>coefficient of performance, heat pump—heating</i>
<i>COP_{HR}</i>	<i>heat recovery coefficient of performance</i>
<u>COPS</u>	<u>critical operations power system</u>
<i>COP_{SHC}</i>	<i>simultaneous cooling and heating coefficient of performance</i>

<u>CRRC</u>	<u>Cool Roof Rating Council</u>
<u>CSA</u>	<u>Canadian Standards Organization</u>
CTI	Cooling Technology Institute
<u>CTI ATC</u>	<u>acceptance test code for water cooling towers</u>
<u>CTI STD</u>	<u>Cooling Technology Institute Standard</u>
CV	constant volume
<u>DASMA</u>	<u>Door and Access Systems Manufacturers Association</u>
db	dry-bulb
<u>DC</u>	<u>direct current</u>
<i>DCV</i>	<i>demand control ventilation</i>
<i>DDC</i>	<i>direct digital control</i>
DOAS	dedicated <i>outdoor air system</i>
DOE	U.S. Department of Energy
DX	direct expansion
<u>EAC</u>	<u>energy attribute certificate</u>
E_c	combustion <i>efficiency</i>
ECM	<u>electronically commutated motor</u>
<i>EER/EER2</i>	<i>energy efficiency ratio</i>
<i>EF</i>	<i>energy factor</i>
<u>EISA</u>	<u>Energy Independence and Security Act</u>
EPCA	U.S. Energy Policy and Conservation Act
ER	<i>energy recovery</i>
E_t	thermal <i>efficiency</i>
<i>ESCC</i>	<i>end-suction close-coupled</i>
<i>ESFM</i>	<i>end-suction frame-mounted/own-bearings</i>
°F	Fahrenheit
<i>(fan) bhp</i>	<i>(fan) brake horsepower</i>
FC	filled cavity
<u>FDD</u>	<u>fault detection and diagnostics</u>
<i>FEI</i>	<i>fan energy index</i>
FL	full-load
<i>FPT</i>	<i>functional performance testing</i>
FPTU	fan-powered <i>terminal unit</i>
ft	foot
<u>GPM</u>	<u>gallons per minute</u>
gr	grains of moisture per pound of dry air
h	hour
<i>HC</i>	<i>heat capacity</i>
<i>HDD</i>	<i>heating degree-day</i>
<i>HDD65</i>	<i>heating degree-days base 65°F</i>
$\text{h} \cdot \text{ft}^2 \cdot ^\circ\text{F} / \text{Btu}$	hour per square foot per degree Fahrenheit per British thermal unit
HID	high-intensity discharge
hp	horsepower
<i>HSPF/HSPF2</i>	<i>heating seasonal performance factor</i>
HVAC	heating, ventilating, and air conditioning
HVACR	heating, ventilating, air conditioning, and refrigeration
HW	heating water
HWST	heating-water supply temperature
IEC	International Electrotechnical Commission
<i>IEER</i>	<i>integrated energy efficiency ratio</i>
IES	Illuminating Engineering Society
<u>IID</u>	<u>intermittent ignition device</u>
IL	inline

in.	inches
I-P	inch-pound
<i>IPLV.IP</i>	<i>integrated part-load value</i>
<u>IR</u>	<u>infrared</u>
<i>ISCOP</i>	<i>integrated seasonal coefficient of performance</i>
<i>ISMRE/ISMRE2</i>	<i>integrated seasonal moisture removal efficiency</i>
<u>ISO</u>	<u>International Standards Organization</u>
IT	information technology
J	joule
K	kelvin
kJ	kilojoule
<i>kVA</i>	<i>kilovolt-ampere</i>
<i>kW</i>	<i>kilowatt</i>
L	length of a <i>linear thermal bridge</i>
lb	pound
lin	linear
lin ft	linear foot
<i>LPA</i>	<i>lighting power allowance</i>
<i>LPD</i>	<i>lighting power density</i>
<i>Ls</i>	<i>liner system</i>
<i>LSG</i>	<i>light-to-solar-gain ratio</i>
<u>MERV</u>	<u>minimum efficiency reporting value</u>
MICA	Midwest Insulation Contractors Association
<u>MIL</u>	<u>U.S. Military Specification</u>
min.	minimum
MPF	mechanical performance factor
<i>MRE</i>	<i>moisture removal efficiency</i>
MSH	monitor seal height
<i>n</i>	number of occurrences a <i>point thermal bridge</i>
NAEC	U.S. National Appliance Energy Conservation Act
NEMA	National Electric Manufacturers Association
NFPA	National Fire Protection Association
NFRC	National Fenestration Rating Council
<i>NPLV.IP</i>	<i>nonstandard part-load value</i>
<i>OA</i>	<i>outdoor air</i>
OAT	<i>outdoor air</i> temperature (dry-bulb unless wet-bulb is specified)
PEI	<i>pump</i> energy index
PER	<i>pump</i> energy rating
<i>PF</i>	<i>projection factor</i>
PFP	parallel fan-powered
PPE	photosynthetic photon efficacy
<u>PRM</u>	<u>Performance Rating Method</u>
PRV	power roof/wall ventilator
PSZ-AC	packaged single-zone air conditioner
PSZ-HP	packaged single-zone heat pump
<i>PTAC</i>	<i>packaged terminal air conditioner</i>
<i>PTHP</i>	<i>packaged terminal heat pump</i>
<u>PV</u>	<u>photovoltaic</u>
<u>P_{W,off}</u>	<u>off-mode power consumption</u>
<u>P_{W,SB}</u>	<u>standby power mode consumption</u>
<i>R</i>	<i>R-value (thermal resistance)</i>
<u>RAC</u>	<u>room air conditioner</u>
RAT	return air temperature (dry-bulb unless wet-bulb is specified)

R_c	<i>thermal resistance</i> of a material or <i>construction</i> from surface to surface
RCR	<i>room cavity ratio</i>
<u>REC</u>	<u>renewable energy certificate</u>
rpm/RPM	revolutions per minute
RSV	radially split, multistage, vertical, inline diffuser casing
R_u	total <i>thermal resistance</i> of a material or <i>construction</i> including air film resistances rpm
SAT	supply air temperature (dry-bulb unless wet-bulb is specified)
SC	<i>shading coefficient</i>
SEER/SEER2	<i>seasonal energy efficiency ratio</i>
SERR	<i>series energy recovery ratio</i>
SHGC	<i>solar heat gain coefficient</i>
SHW	service hot water
<u>SI</u>	<u>International System of Units</u>
SL	standby loss
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SPVAC	<i>single-package vertical air conditioner</i>
SPVHP	<i>single-package vertical heat pump</i>
ST	submersible turbine
<u>SWH</u>	<u>service water heating</u>
SZ	single zone
TDA	total display area
T_{db}	dry-bulb temperature
<u>TIA</u>	<u>Telecommunications Industry Association</u>
TSPR	<i>total system performance ratio</i>
$TSPR_p$	<i>TSPR of a proposed design</i>
$TSPR_r$	<i>TSPR of a TSPR reference building design</i>
T_{wb}	wet-bulb temperature
<u>UEF</u>	<u>uniform energy factor</u>
UPS	uninterruptible power supply
VAV	<i>variable air volume</i>
VRF	<i>variable refrigerant flow</i>
VSD	variable-speed drive
VT	<i>visible transmittance</i> (also known as visible light transmittance [VLT])
V&T	verification and testing
W	watt
wb	wet-bulb
<u>WDMA</u>	<u>Window and Door Manufacturers Association</u>
WF	well factor
W/ft ²	watts per square foot
χ	<i>chi-factor, thermal transmittance</i> of a point thermal bridge
Ψ	<i>psi-factor, thermal transmittance</i> per unit length of a linear thermal bridge

POLICY STATEMENT DEFINING ASHRAE'S CONCERN FOR THE ENVIRONMENTAL IMPACT OF ITS ACTIVITIES

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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Founded in 1894, ASHRAE is a global professional society committed to serve humanity by advancing the arts and sciences of heating, ventilation, air conditioning, refrigeration, and their allied fields.

As an industry leader in research, standards writing, publishing, certification, and continuing education, ASHRAE and its members are dedicated to promoting a healthy and sustainable built environment for all, through strategic partnerships with organizations in the HVAC&R community and across related industries.

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