ADDENDA

ANSI/ASHRAE/IES Addendum ab to
ANSI/ASHRAE/IES Standard 90.1-2022

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

Approved by the ASHRAE Standards Committee on April 14, 2025; by the American National Standards Institute on May 9, 2025; and by the Illuminating Engineering Society on April 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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SPECIAL NOTE

This American National Standard (ANS) is a national voluntary consensus Standard developed under the auspices of ASHRAE. *Consensus* is defined by the American National Standards Institute (ANSI), of which ASHRAE is a member and which has approved this Standard as an ANS, as "substantial agreement reached by directly and materially affected interest categories. This signifies the concurrence of more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that an effort be made toward their resolution." Compliance with this Standard is voluntary until and unless a legal jurisdiction makes compliance mandatory through legislation.

ASHRAE obtains consensus through participation of its national and international members, associated societies, and public review.

ASHRAE Standards are prepared by a Project Committee appointed specifically for the purpose of writing the Standard. The Project Committee Chair and Vice-Chair must be members of ASHRAE; while other committee members may or may not be ASHRAE members, all must be technically qualified in the subject area of the Standard. Every effort is made to balance the concerned interests on all Project Committees.

The Senior Manager of Standards of ASHRAE should be contacted for

a. interpretation of the contents of this Standard,
b. participation in the next review of the Standard,
c. offering constructive criticism for improving the Standard, or
d. permission to reprint portions of the Standard.

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

The Illuminating Engineering Society has revised the definitions and names of lighting zones. This addendum changes the names and definitions of the lighting zones to match new definitions/terms to match the lighting industry guidance in RP-43.

The lighting power density (LPD) values change as follows:

- *Some areas now have a value for LZ0. This change is consistent with the new guidance by the lighting industry.*
- *Many areas experienced a reduction of 15%. This reduction is a combination change in design practice (lamp lumen depreciation shifting from 0.85 to 0.90), increase in device efficacy, as well as a change in luminaire dirt depreciation.*
- *A few areas reduced by 20% (the 15% explained above the second 5% from a realignment in design).*
- *Dining areas reduced by 50%, this is a realignment in design. The LPD for dining areas LZ4 (dense urban) should be less than the LPD for interior dining.*

The scope of the outdoor lighting efficiency standards changed to allow various outdoor lighting applications to be covered regardless of whether the outdoor lighting application was connected to a building. The added Exception 4 to Section 9.1.1.1 makes it clear that the scope of the lighting requirements does not apply to public roadways. Thus the "drives" in uncovered parking areas do not apply to public roadways.

A cost-effectiveness analysis is not required for this addendum. These values were developed based on changes in design practice and coupled with market available technology.

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

Addendum ab to Standard 90.1-2022

Modify the exceptions to Section 9.1.1.1 as shown.

9.1.1 Scope

9.1.1.1 New Building or Site System or Equipment. Lighting *equipment* and *systems* serving the lighting needs of new *buildings* or new ***site*** *systems* and *equipment* shall comply with the requirements of this section as described in Section 9.2.

This section shall apply to the following:

a. Lighting *equipment* and *systems* serving interior *spaces* of *buildings*.
b. Lighting *equipment* and *systems* serving exterior applications.

Exceptions to 9.1.1.1:

1. Emergency lighting that is *automatically* off during normal operation.
2. Lighting, including exit signs, that is specifically designated as required by a health or life safety statute, ordinance, or regulation.
3. Decorative gas *lighting systems*.
4. Lighting for public streets, roadways, highways and traffic signage lighting, including lighting for driveway entrances occurring in the public right-of-way

Modify the definitions of Exterior Lighting Zones in Table 9.5.3-1 and modify threshold wattage for motion sensing of parking lighting to 40 W.

9.4.1.4 Exterior Lighting Control. For each surface or area, all of the lighting control functions indicated in Table 9.4.2-2 shall be implemented. Lighting for exterior applications not exempted in Section 9.1 shall meet the requirements defined here and listed in Table 9.4.2-2:

[. . .]

e. Occupancy-sensing light reduction control: Lighting shall be *controlled* to *automatically* reduce the connected lighting power by a minimum of 50% when no activity has been detected in the area illuminated

by the controlled *luminaires* for a time of no longer than 15 minutes. No more than ~~1500~~ 600 W of lighting power shall be controlled together.

[. . .]

Modify the definitions of Exterior Lighting Zones in Table 9.5.3-1 as shown.

9.5.3 Exterior Lighting Power. The total *exterior lighting power allowance* for all exterior applications is the sum of the base *site* allowance and all the individual allowances that are designed to be illuminated and are permitted in Table 9.5.3-2 for the applicable lighting zone in Table 9.5.3-1. The *installed exterior lighting power* identified in accordance with Section 9.1.3 shall not exceed the *exterior lighting power allowance* developed in accordance with this section. Trade-offs are allowed only among exterior lighting applications listed in the Table 9.5.3-2 "Tradable Surfaces" section. The lighting zone for exterior applications is determined from Table 9.5.3-1 unless otherwise specified by the local jurisdiction.

Table 9.5.3-1 Exterior Lighting Zones

Lighting Zone	Description
0	~~Undeveloped areas within national parks, state parks, forest land, rural areas, and other undeveloped areas as defined by the *authority having jurisdiction*.~~ • Agricultural and rural residential areas • Visitor centers or lodges within or adjacent to wilderness, natural parks, protected wildlife areas • Areas surrounding astronomical observatories • Municipal parks in rural areas • All other similar areas
1	~~Developed areas of national parks, state parks, forest land, and rural areas~~ • Rural town centers • Single-family, mobile home, and low-rise multi-family in low pedestrian activity areas • Low-activity institutional, commercial, campus, and light industrial areas • Municipal parks in low and moderate pedestrian activity areas • All other similar areas
2	~~Areas predominantly consisting of *residential* zoning, neighborhood business districts, light industrial with limited nighttime use and *residential* mixed use areas~~ • Moderate-activity commercial corridors and suburban town centers • Single and multi-family residential areas in moderate an high-pedestrian activity areas • Moderate-activity institutional and industrial uses in suburban or urban areas • Urban parks and campuses in high pedestrian activity areas • All other similar areas
3	~~All other areas~~ • Commercial corridors and central business districts in urban areas with high pedestrian activity • Urban hospitality and entertainment districts • Urban areas with convention centers, sports arenas, and public transportation facilities • Heavy industrial areas • All others similar areas
4	~~High-activity commercial districts in major metropolitan areas as designated by the local jurisdiction~~ Very high-activity urban entertainment, hospitality and retail areas, specifically designated as LZ4 by the local land use planning authority

Table 9.5.3-2 Individual Lighting Power Densities for Building Exteriors Applications (I-P)

	Lighting Zone 0	Lighting Zone 1	Lighting Zone 2	Lighting Zone 3	Lighting Zone 4	Section 9.4.1.4 Required Controls
Base Site Allowance (Base allowance may be used in tradable or non-tradable surfaces.)						
	40 W—	135 ~~160~~ W	240 ~~280~~ W	340 ~~400~~ W	475 ~~560~~ W	
Tradable Surfaces (*LPD* for uncovered parking areas, *building* grounds, *building entrances*, exits and loading docks, canopies and overhangs, and outdoor sales areas may be traded.)						
~~**Uncovered**~~ **Exterior Parking Areas (Including areas under canopies)**						
Parking areas and drives	0.006 W/ft^2 —	0.013 ~~0.015~~ W/ft^2	0.022 ~~0.026~~ W/ft^2	0.031 ~~0.037~~ W/ft^2	0.042 ~~0.052~~ W/ft^2	(b) and either (d) or (e)
Parking areas and drives with *luminaires* >~~78~~ 40 W and mounting height <24 ft	0.006 W/ft^2 —	0.013 ~~0.015~~ W/ft^2	0.022 ~~0.026~~ W/ft^2	0.031 ~~0.037~~ W/ft^2	0.042 ~~0.052~~ W/ft^2	(b) and (e)
Grounds						
Walkways/ramps	0.14 W/linear ft —	0.43 ~~0.5~~ W/linear ft	0.43 ~~0.5~~ W/linear ft	0.47 ~~0.55~~ W/linear ft	0.51 ~~0.60~~ W/linear ft	(b) and either (d) or (e)
Plaza areas	0.008 W/ft^2 —	0.024 ~~0.028~~ W/ft^2	0.042 ~~0.049~~ W/ft^2	0.060 ~~0.070~~ W/ft^2	0.083 ~~0.098~~ W/ft^2	(b) and either (d) or (e)
Roof terraces and special features	0.011 W/ft^2 —	0.034 ~~0.04~~ W/ft^2	0.060 ~~0.07~~ W/ft^2	0.085 ~~0.10~~ W/ft^2	0.120 ~~0.140~~ W/ft^2	(b) and either (d) or (e)
Dining areas	0.026 W/ft^2 —	0.069 ~~0.156~~ W/ft^2	0.137 ~~0.273~~ W/ft^2	0.276 ~~0.390~~ W/ft^2	0.350 ~~0.546~~ W/ft^2	(b) and either (d) or (e)
Pedestrian tunnels	0.022 W/ft^2 —	0.054 ~~0.063~~ W/ft^2	0.094 ~~0.110~~ W/ft^2	0.133 ~~0.157~~ W/ft^2	0.187 ~~0.220~~ W/ft^2	(d) or (e)
Landscaping	0.033 W/ft^2 —	0.012 ~~0.014~~ W/ft^2	0.021 ~~0.025~~ W/ft^2	0.031 ~~0.036~~ W/ft^2	0.043 ~~0.050~~ W/ft^2	(b) and (c)
Building Entrances, Exits, and Loading Docks						
Pedestrian and vehicular entrances and exits	1.57 W/linear ft of opening —	4.8 ~~5.6~~ W/linear ft of opening	8.3 ~~9.8~~ W/linear ft of opening	11.9 ~~14.0~~ W/linear ft of opening	16.6 ~~19.6~~ W/linear ft of opening	(b) and either (d) or (e)
Entry canopies	0.020 W/ft^2 —	0.061 ~~0.072~~ W/ft^2	0.107 ~~0.126~~ W/ft^2	0.153 ~~0.180~~ W/ft^2	0.214 ~~0.252~~ W/ft^2	(b) and either (d) or (e)
Loading docks	—	0.088 ~~0.104~~ W/ft^2	0.155 ~~0.182~~ W/ft^2	0.221 ~~0.260~~ W/ft^2	0.309 ~~0.364~~ W/ft^2	(b) and either (d) or (e)
Sales Canopies						
Free standing and attached	—	0.10 ~~0.20~~ W/ft^2	0.18 ~~0.35~~ W/ft^2	0.25 ~~0.50~~ W/ft^2	0.35 ~~0.70~~ W/ft^2	(b) and either (d) or (e)
Outdoor Sales						
Open areas (including vehicle sales lots)	—	0.061 ~~0.072~~ W/ft^2	0.107 ~~0.126~~ W/ft^2	0.153 ~~0.180~~ W/ft^2	0.214 ~~0.252~~ W/ft^2	(b) and either (d) or (e)
Street frontage for vehicle sales lots in addition to “open area” allowance	—	—	6.1 ~~7.2~~ W/linear ft	8.8 ~~10.3~~ W/linear ft	12.2 ~~14.4~~ W/linear ft	(b) and either (d) or (e)

Informative Note: A parking garage/ramp/structure is an *enclosed space*. See the interior table for parking garages/ramp/structure. Top floor of a parking garage/ramp/structure is not an *enclosed space*.

Table 9.5.3-2 Individual Lighting Power Densities for Building Exteriors Applications (I-P) *(Continued)*

	Lighting Zone 0	Lighting Zone 1	Lighting Zone 2	Lighting Zone 3	Lighting Zone 4	Section 9.4.1.4 Required Controls
Nontradable Surfaces (*LPD* for the following applications can be used only for the specific application and cannot be traded between surfaces or with other exterior lighting. The following allowances are in addition to any allowance otherwise permitted in the "Tradable Surfaces" section of this table.)						
Stairways	Exempt	Exempt	Exempt	Exempt	Exempt	(b)
Building facades (The allowance for each illuminated facade *orientation* shall be calculated by multiplying the allowable value by the entire *facade area* or facades length for that *orientation*.)	—	0.048 ~~0.056~~ W/ft^2 of *facade area* or 1.19 ~~1.4~~ W/linear ft of facade length	0.083 ~~0.098~~ W/ft^2 of *facade area* or 2.04 ~~2.4~~ W/linear ft of facade length	0.119 ~~0.140~~ W/ft^2 of *facade area* or 2.89 ~~3.4~~ W/ linear ft of facade length	0.167 ~~0.196~~ W/ft^2 of *facade area* or 4.08 ~~4.8~~ W/linear ft of facade length	(b) and (c)
Automated teller machines and night depositories	—	80 ~~90~~ W per location plus 35 W per additional ATM per location	80 ~~90~~ W per location plus 35 W per additional ATM per location	80 ~~90~~ W per location plus 35 W per additional ATM per location	80 ~~90~~ W per location plus 35 W per additional ATM per location	(b)
Uncovered entrances and gatehouse inspection stations at guarded facilities	—	0.115 ~~0.144~~ W/ft^2	0.202 ~~0.252~~ W/ft^2	0.288 ~~0.360~~ W/ft^2	0.403 ~~0.504~~ W/ft^2	(b) and either (d) or (e)
Uncovered loading areas for law enforcement, fire, ambulance, and other emergency service vehicles	—	0.088 ~~0.104~~ W/ft^2	0.155 ~~0.182~~ W/ft^2	0.221 ~~0.260~~ W/ft^2	0.309 ~~0.364~~ W/ft^2	(b) and either (d) or (e)
Drive-through windows/doors	—	42 ~~53~~ W per drive-through	74 ~~92~~ W per drive-through	106 ~~132~~ W per drive-through	148 ~~185~~ W per drive-through	(b) and either (d) or (e)
Parking near 24-hour retail entrances	—	64 ~~80~~ W per main entry	112 ~~140~~ W per main entry	160 ~~200~~ W per main entry	224 ~~280~~ W per main entry	(b) and either (d) or (e)
For areas that are not listed in this table or are not comparable to areas listed in this table, use the comparable interior *space* type from Tables 9.5.2.1-1 and 9.5.2.1-2 as modified by factors in this row.	—	10 ~~22~~% of the *interior lighting power density* value	25 ~~39~~% of the *interior lighting power density* value	40 ~~55~~% of the *interior lighting power density* value	50 ~~77~~% of the *interior lighting power density* value	(b) and either (d) or (e)
Roadway/parking entry, trail head, and toilet facility, or other locations approved by the *authority having jurisdiction*.	A single *luminaire* of 10 W or less	—	—	—	—	(b) and either (d) or (e)

Table 9.5.3-2 Individual Lighting Power Densities for Building Exteriors Applications (SI)

	Lighting Zone 0	Lighting Zone 1	Lighting Zone 2	Lighting Zone 3	Lighting Zone 4	Section 9.4.1.4 Required Controls
Base Site Allowance (Base allowance may be used in tradable or non-tradable surfaces.)						
	40 W	135 ~~160~~ W	240 ~~280~~ W	340 ~~400~~ W	475 ~~560~~ W	
Tradable Surfaces (*LPD* for uncovered parking areas, *building* grounds, *building entrances*, exits and loading docks, canopies and overhangs, and outdoor sales areas may be traded.)						
~~Uncovered~~ Exterior Parking Areas (Including areas under canopies)						
Parking areas and drives	0.046 W/m^2	0.140 ~~0.161~~ W/m^2	0.237 ~~0.280~~ W/m^2	0.334 ~~0.398~~ W/m^2	0.473 ~~0.560~~ W/m^2	(b) and either (d) or (e)
Parking areas and drives with *luminaires* >~~78~~ 40 W and mounting height <7.3 m	0.046 W/m^2	0.140 ~~0.161~~ W/m^2	0.237 ~~0.280~~ W/m^2	0.334 ~~0.398~~ W/m^2	0.473 ~~0.560~~ W/m^2	(b) and (e)
Grounds						
Walkways/ramps	0.5 W/linear m	1.4 ~~1.6~~ W/linear m	1.4 ~~1.6~~ W/linear m	1.8 ~~1.8~~ W/linear m	2.0 ~~2.0~~ W/linear m	(b) and either (d) or (e)
Plaza areas	0.085 W/m^2	0.256 ~~0.301~~ W/m^2	0.448 ~~0.527~~ W/m^2	0.640 ~~0.753~~ W/m^2	0.896 ~~1.054~~ W/m^2	(b) and either (d) or (e)
Roof terraces and special features	0.121 W/m^2	0.336 ~~0.430~~ W/m^2	0.640 ~~0.753~~ W/m^2	0.915 ~~1.08~~ W/m^2	1.28 ~~1.51~~ W/ W/m^2	(b) and either (d) or (e)
Dining areas	0.245 W/m^2	0.742 ~~1.68~~ W/m^2	1.47 ~~2.94~~ W/m^2	2.97 ~~4.20~~ W/m^2	3.77 ~~5.88~~ W/m^2	(b) and either (d) or (e)
Pedestrian tunnels	0.22 W/m^2	0.576 ~~0.678~~ W/m^2	1.01 ~~1.18~~ W/m^2	1.43 ~~1.69~~ W/m^2	2.01 ~~2.37~~ W/m^2	(d) or (e)
Landscaping	0.34 W/m^2	0.128 ~~0.151~~ W/m^2	0.229 ~~0.269~~ W/m^2	0.329 ~~0.387~~ W/m^2	0.457 ~~0.538~~ W/m^2	(b) and (c)
Building Entrances, Exits, and Loading Docks						
Pedestrian and vehicular entrances and exits	5.2 W/linear m of opening	15.6 ~~18.4~~ W/linear m of opening	27.3 ~~32.1~~ W/linear m of opening	39.0 ~~45.9~~ W/linear m of opening	54.6 ~~64.3~~ W/linear m of opening	(b) and either (d) or (e)
Entry canopies	0.020 W/m^2	0.061 ~~0.78~~ W/ m^2	0.107 ~~1.36~~ W/ m^2	0.153 ~~1.94~~ W/ m^2	0.214 ~~2.71~~ W/ m^2	(b) and either (d) or (e)
Loading docks	—	0.951 ~~1.12~~ W/m^2	1.67 ~~1.96~~ W/m^2	2.38 ~~2.80~~ W/m^2	3.32 ~~3.92~~ W/m^2	(b) and either (d) or (e)
Sales Canopies						
Free standing and attached	—	1.08 ~~2.15~~ W/m^2	1.88 ~~3.77~~ W/m^2	2.69 ~~5.38~~ W/m^2	3.77 ~~7.53~~ W/m^2	(b) and either (d) or (e)
Outdoor Sales						
Open areas (including vehicle sales lots)	—	0.659 ~~0.775~~ W/m^2	1.15 ~~1.36~~ W/m^2	1.64 ~~1.94~~ W/m^2	2.31 ~~2.71~~ W/m^2	(b) and either (d) or (e)
Street frontage for vehicle sales lots in addition to "open area" allowance	—	—	7.2 ~~23.6~~ W/linear m	10.3 ~~33.8~~ W/linear m	14.4 ~~47.2~~ W/linear m	(b) and either (d) or (e)

Informative Note: A parking garage/ramp/structure is an *enclosed space*. See the interior table for parking garages/ramp/structure. Top floor of a parking garage/ramp/structure is not an *enclosed space*.

Table 9.5.3-2 Individual Lighting Power Densities for Building Exteriors Applications (SI)

	Lighting Zone 0	Lighting Zone 1	Lighting Zone 2	Lighting Zone 3	Lighting Zone 4	Section 9.4.1.4 Required Controls
Nontradable Surfaces (*LPD* for the following applications can be used only for the specific application and cannot be traded between surfaces or with other exterior lighting. The following allowances are in addition to any allowance otherwise permitted in the "Tradable Surfaces" section of this table.)						
Stairways	Exempt	Exempt	Exempt	Exempt	Exempt	(b)
Building facades (The allowance for each illuminated facade *orientation* shall be calculated by multiplying the allowable value by the entire *facade area* or facade length for that *orientation*.)	—	0.512 ~~0.603~~ W/m^2 of *facade area* or 3.9 ~~4.6~~ W/linear m of facade length	0.896 ~~1.05~~ W/ m^2 of *facade area* or 6.7 ~~7.9~~ W/linear m of facade length	1.28 ~~1.51~~ W/ m^2 of *facade area* or 9.5 ~~11.2~~ W/ linear m of facade length	1.79 ~~2.11~~ W/ m^2 of *facade area* or 13.4 ~~15.7~~ W/linear m of facade length	(b) and (c)
Automated teller machines and night depositories	—	80 ~~90~~ W per location plus 35 W per additional ATM per location	80 ~~90~~ W per location plus 35 W per additional ATM per location	80 ~~90~~ W per location plus 35 W per additional ATM per location	80 ~~90~~ W per location plus 35 W per additional ATM per location	(b)
Uncovered entrances and gatehouse inspection stations at guarded facilities	—	1.24 ~~1.54~~ W/m^2	2.17 ~~2.71~~ W/m^2	3.10 ~~3.87~~ W/m^2	4.39 ~~5.42~~ W/m^2	(b) and either (d) or (e)
Uncovered loading areas for law enforcement, fire, ambulance, and other emergency service vehicles	—	0.951 ~~1.20~~ W/m^2	1.67 ~~1.96~~ W/m^2	2.38 ~~2.80~~ W/m^2	3.33 ~~3.92~~ W/m^2	(b) and either (d) or (e)
Drive-through windows/doors	—	42 ~~53~~ W per drive-through	74 ~~92~~ W per drive-through	106 ~~132~~ W per drive-through	148 ~~185~~ W per drive-through	(b) and either (d) or (e)
Parking near 24-hour retail entrances	—	64 ~~80~~ W per main entry	112 ~~140~~ W per main entry	160 ~~200~~ W per main entry	224 ~~280~~ W per main entry	(b) and either (d) or (e)
For areas that are not listed in this table or are not comparable to areas listed in this table, use the comparable interior *space* type from Tables 9.5.2.1-1 and 9.5.2.1-2 as modified by factors in this row.	—	10 ~~22~~% of the *interior lighting power density* value	25 ~~39~~% of the *interior lighting power density* value	40 ~~55~~% of the *interior lighting power density* value	50 ~~77~~% of the *interior lighting power density* value	(b) and either (d) or (e)
Roadway/parking entry, trail head, and toilet facility, or other locations approved by the *authority having jurisdiction*.	A single *luminaire* of 10 W or less	—	—	—	—	(b) and either (d) or (e)

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.

ASHRAE · 180 Technology Parkway · Peachtree Corners, GA 30092 · www.ashrae.org

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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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To ensure that you have all of the approved addenda, errata, and interpretations for this Standard, visit www.ashrae.org/standards to download them free of charge.

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