ADDENDA

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

Energy Standard for Buildings Except Low-Rise Residential Buildings

Approved by the ASHRAE Standards Committee on January 23, 2016; by the ASHRAE Board of Directors on January 27, 2016; by the IES Board of Directors on December 31, 2015; and by the American National Standards Institute on February 24, 2016.

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. The change submittal form, instructions, and deadlines may be obtained in electronic form from the ASHRAE website (www.ashrae.org) or in paper form from the Senior Manager of Standards.

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FOREWORD

This addendum increases the minimum ERV requirements from zero to a reasonable minimum size for smaller units. There are small HVAC units (for example, PTACS in apartment buildings) where energy recovery is currently required with very small amounts of supply air. With this addendum, the supply air requirements at various outdoor air fractions are reduced so that for units operating less than 8000 hours per year at least 40 cfm of outdoor air is available for recovery for continuous ventilation systems in the coldest climate zones. This airflow limit matches the smallest typical ERV unit available and ventilation requirements for residential units larger than 500 ft^2, representing about two-thirds of the multifamily units (https://www.census.gov/construction/chars/mfu.html). There continues to be a requirement for most dwelling units to have energy recovery in the colder climates. In warmer climates, a larger unit is used as the threshold, based on an estimated cost effectiveness using an 8.0-year ASHRAE scalar and a simplified temperature bin calculation. Note that Climate Zones 0A and 0B are not included here as they are being added in a separate proposed addendum (br).

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 ce to 90.1-2013

Modify the standard as follows (IP and SI Units).

Revise Table 6.5.6.1-1and Table 6.5.6.1-1 as follows:

TABLE 6.5.6.1-1 (IP) Exhaust Air Energy Recovery Requirements for Ventilation Systems Operating Less than 8000 Hours per Year

Zone	% Outdoor Air at Full Design Airflow Rate							
	≥10% and <20%	≥20% and <30%	≥30% and < 40%	≥40% and < 50%	≥50% and < 60%	≥60% and < 70%	≥70% and < 80%	≥80%
	Design Supply Fan Airflow Rate, cfm							
3B, 3C, 4B, 4C, 5B	NR	NR	NR	NR	NR	NR	NR	NR
1B, 2B,5C	NR	NR	NR	NR	≥26000	≥12000	≥5000	≥4000
6B	≥28000	≥26500	≥11000	≥5500	≥4500	≥3500	≥2500	≥1500
1A, 2A, 3A, 4A, 5A, 6A	≥26,000	≥16,000	≥5500	≥4500	≥3500	≥2000	≥1000	~~>0~~≥120
7,8	≥4500	≥4000	≥2500	≥1000	~~>0~~≥140	~~>0~~≥120	~~>0~~≥100	~~>0~~≥80

NR—Not required

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TABLE 6.5.6.1-2 (IP) Exhaust Air Energy Recovery Requirements for Ventilation Systems Operating Greater than or Equal to 8000 Hours per Year

Zone	% Outdoor Air at Full Design Airflow Rate							
	≥10% and <20%	**≥20% and <30%**	**≥30% and <40%**	**≥40% and <50%**	**≥50% and <60%**	**≥60% and <70%**	**≥70% and < 80%**	**≥80%**
	Design Supply Fan Airflow Rate, cfm							
3C	NR	NR	NR	NR	NR	NR	NR	NR
1B, 2B, 3B, 4C, 5C	NR	≥19,500	≥9000	≥5000	≥4000	≥3000	≥1500	~~>0~~≥120
1A, 2A, 3A, 4B, 5B	≥2500	≥2000	≥1000	≥500	~~>0~~≥140	~~>0~~≥120	~~>0~~≥100	~~>0~~≥80
4A, 5A, 6A, 6B, 7, 8	~~>0~~≥200	~~>0~~≥130	~~>0~~≥100	~~>0~~≥80	~~>0~~≥70	~~>0~~≥60	~~>0~~≥50	~~>0~~≥40

NR—Not required

TABLE 6.5.6.1-1 (SI)Exhaust Air Energy Recovery Requirements for Ventilation Systems Operating Less than 8000 Hours per Year

Zone	% Outdoor Air at Full Design Airflow Rate							
	≥10% and <20%	**≥20% and <30%**	**≥30% and < 40%**	**≥40% and < 50%**	**≥50% and < 60%**	**≥60% and < 70%**	**≥70% and < 80%**	**≥80%**
	Design Supply Fan Airflow Rate, L/s							
3B, 3C, 4B, 4C, 5B	NR	NR	NR	NR	NR	NR	NR	NR
0B, 1B, 2B,5C	NR	NR	NR	NR	≥12271	≥5663	≥2360	≥1888
6B	≥13215	≥12507	≥5191	≥2596	≥2124	≥1652	≥1180	≥708
0A, 1A, 2A, 3A, 4A, 5A, 6A	≥12271	≥7551	≥2596	≥2124	≥1652	≥944	≥472	~~>0~~≥60
7,8	≥2124	≥1888	≥1180	≥500	~~>0~~≥70	~~>0~~≥60	~~>0~~≥50	~~>0~~≥40

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TABLE 6.5.6.1-2 (SI) Exhaust Air Energy Recovery Requirements for Ventilation Systems Operating Greater than or Equal to 8000 Hours per Year

Zone	% Outdoor Air at Full Design Airflow Rate							
	≥10% and <20%	**≥20% and <30%**	**≥30% and <40%**	**≥40% and <50%**	**≥50% and <60%**	**≥60% and <70%**	**≥70% and < 80%**	**≥80%**
	Design Supply Fan Airflow Rate, L/s							
3C	NR	NR	NR	NR	NR	NR	NR	NR
0B ,1B, 2B, 3B, 4C, 5C	NR	≥2903	≥4248	≥2360	≥1888	≥1416	≥708	~~>0~~≥60
0A, 1A, 2A, 3A, 4B, 5B	≥1180	≥944	≥472	≥236	~~>0~~≥35	~~>0~~≥60	~~>0~~≥50	~~>0~~≥40
4A, 5A, 6A, 6B, 7, 8	~~>0~~≥100	~~>0~~≥65	~~>0~~≥50	≥40	~~>0~~≥35	~~>0~~≥30	~~>0~~≥25	~~>0~~≥20

NR—Not required

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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