



**BSR/ASHRAE/ASHE Addendum m  
to ANSI/ASHRAE/ASHE Standard 170-2021**

**Public Review Draft**

**Proposed Addendum m to  
Standard 170-2021, Ventilation of  
Health Care Facilities**

**Second Public Review (November 2024)  
(Draft shows Proposed Independent Substantive Changes  
to Previous Public Review Draft)**

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**(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

*Proposed Addendum m revises Tables 7-1, 8-1, 8-2 and 9-1 to incorporate types of room units that are allowable for each space type. This will provide clarity and consistency within this standard. This addendum comprises the following general edits:*

- *New definition for room unit.*
- *Revisions to Tables 7-1, 8-1, 8-2 and 9-1 modifying the general requirement for recirculating room units to align with the definition and specify the type of room unit allowable in each space.*

*Revisions to the requirements for air change rate provisions with respect to room units.*

***[Note to Reviewers: This public review draft makes proposed independent substantive changes to the previous public review draft. 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. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]***

## **Addendum m to 170-2021**

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***Revise Section 6.5.3 as shown. The remainder of Section 6.5 is unchanged.***

### **6.5 Heating and Cooling Systems. ...**

**6.5.3 Radiant Heating Systems.** If radiant heating is provided for an AII room, a protective environment room, a wound intensive care unit (burn unit), an OR, or a procedure room, either flat and smooth radiant ceiling or wall panels with exposed cleanable surfaces or radiant floor heating shall be used. Gravity-type heating or cooling units, such as radiators or convectors, shall not be used in ORs and other special care areas **where FGI Guidelines require an integral coved wall base.**

***Revise Section 7.1.a.5 as shown. The remainder of Section 7.1 is unchanged.***

### **7.1 General Requirements. ...**

a. Spaces shall be ventilated according to Table 7-1.

...

5. For spaces where Table 7-1 permits air to be recirculated by room units, the portion of the minimum total air changes per hour required for a space that is greater than the minimum outdoor air changes per hour required component may be provided by recirculating *room units*. Such *room units* shall
  - i. not receive nonfiltered, nonconditioned outdoor air;
  - ii. serve only a single space; and
  - iii. provide a minimum MERV 8 filter for airflow passing over any surface that is designed to condense water. This filter shall be located upstream of any such cold surface so that all of the air passing over the cold surface is filtered.

BSR/ASHRAE/ASHE Addendum m to ANSI/ASHRAE/ASHE Standard 170-2021, *Ventilation of Health Care Facilities*

Second Independent Substantive Change Public Review Draft

iv. not be gravity-type heating or cooling units, such as radiators or convectors.

...

***Revise Table 7-1 and notes as shown below. The remainder of Table 7-1 and notes are unchanged.***

**Table 7-1 Design Parameters—Inpatient Spaces**

Function of Space (ee)	Pressure Relationship to Adjacent Areas (n)	Minimum Outdoor ach	Minimum Total ach	All Room Air Exhausted Directly to Outdoors (j)	Air Recirculated by Means of Room Units <u>by Type</u> (a)	Unoccupied Turndown	Minimum Filter Efficiencies (cc)	Design Relative Humidity (k), %	Design Temperature (l), °F/°C
NURSING UNITS AND OTHER PATIENT CARE AREAS									
Emergency department public waiting area (FGI 2.2-3.1.2.4 & 2.2-3.1.3.4)	Negative	2	12	Yes (q)	A, C, DA	Yes (ff)	MERV-8	Max 65	70-75/21-24
Emergency department trauma/resuscitation room (FGI 2.2-3.1.3.6[4]) (c)	Positive	3	15	NR	A, B, C, DA	Yes	MERV-14	20-60	70-75/21-24
Emergency service triage area (FGI 2.2-3.1.3.3)	Negative	2	12	Yes (q)	A, C, DA	Yes (ff)	MERV-8	Max 60	70-75/21-24

**Table 7-1 Design Parameters—Inpatient Spaces (Continued)**

Function of Space (ee)	Pressure Relationship to Adjacent Areas (n)	Minimum Outdoor ach	Minimum Total ach	All Room Air Exhausted Directly to Outdoors (j)	Air Recirculated by Means of Room Units <u>by type</u> (a)	Unoccupied Turndown	Minimum Filter Efficiencies (cc)	Design Relative Humidity (k), %	Design Temperature (l), °F/°C
Radiology waiting rooms (FGI 2.2-3.4.10.1)	Negative	2	12	Yes (q), (w)	A, C, DA	Yes (ff)	MERV-8	Max 60	70-75/21-24

**Table 7-1 Design Parameters—Inpatient Spaces (Continued)**

Function of Space (ee)	Pressure Relationship to Adjacent Areas (n)	Minimum Outdoor ach	Minimum Total ach	All Room Air Exhausted Directly to Outdoors (j)	Air Recirculated by Means of Room Units <u>by type</u> (a)	Unoccupied Turndown	Minimum Filter Efficiencies (cc)	Design Relative Humidity (k), %	Design Temperature (l), °F/°C
PATIENT SUPPORT FACILITIES									
Food and supply storage (FGI 2.1-4.3.8.13)	NR	NR	2	NR	A, B, C, DA, B	No	MERV-8	NR	72-78/22-26

**Table 7-1 Design Parameters—Inpatient Spaces (Continued)**

Function of Space (ee)	Pressure Relationship to Adjacent Areas (n)	Minimum Outdoor ach	Minimum Total ach	All Room Air Exhausted Directly to Outdoors (j)	Air Recirculated by Means of Room Units <u>by type</u> (a)	Unoccupied Turndown	Minimum Filter Efficiencies (cc)	Design Relative Humidity (k), %	Design Temperature (l), °F/°C
GENERAL SUPPORT FACILITIES: STERILE PROCESSING									
Clean assembly/workroom (FGI 2.1-5.1.2.2[3]) (z)	Positive	2	4	NR	A, B, C, DA, B	No	MERV-8 (gg)	Max 60	68-73/20-23
One-room sterile processing facility (FGI 2.1-5.1.2.3) (z) (ll)	NR	2	6	NR	NeA, B	No	MERV-14 (gg)	NR	NR

BSR/ASHRAE/ASHE Addendum m to ANSI/ASHRAE/ASHE Standard 170-2021, *Ventilation of Health Care Facilities*

First Public Review Draft

Sterilizer equipment room (FGI 2.1-5.1.2.2(1)(b)) (z)	Negative	NR	2	NR	<del>NR, A, B, C, D</del>	No	MERV-8	NR	NR
Clean/sterile medical/surgical supply receiving (FGI 2.1-5.1.2.4(2))(z)	NR	NR	4	NR	<del>NR, A, B</del>	No	MERV-8	NR	NR

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**Normative Notes for Table 7-1:**

- a. *Room* unit use shall be limited to the type indicated in this column. Where multiple unit types are indicated, a single device with a combination of components may be utilized. *Room units* are acceptable for providing that portion of the minimum total air changes per hour that is permitted by Section 7.1 (subparagraph [a][5]). Because of the cleaning difficulty and potential for buildup of contamination, recirculating room units shall not be used in areas marked “No.” The design of these systems should prevent stagnation and short circuiting of airflow. The design of such systems shall also allow for easy access for scheduled preventative maintenance and cleaning. **Additional supplemental and/or enhanced air treatment technologies in addition to minimum filtration and minimum air change rate standards shall be allowed based on documentation of effectiveness and safety for anticipated space occupants.**

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**Revise Section 8.1.a.5 as shown. The remainder of section 8.1 is unchanged.**

## **8. SPACE VENTILATION—OUTPATIENT SPACES...**

### **8.1 Specialized Outpatient Facility Requirements. ...**

- a. Spaces shall be ventilated according to Table 8-1.

...

5. spaces where Table 8-1 permits air to be recirculated by room units, the portion of the minimum total air changes per hour required for a space that is greater than the minimum outdoor air changes per hour required component may be provided by recirculating *room HVAC units*. Such ~~recirculating room HVAC units~~ shall
- receive nonfiltered, nonconditioned outdoor air;
  - serve only a single space; and
  - provide a minimum MERV 8 filter for airflow passing over any surface that is designed to condense water. This filter shall be located upstream of any such cold surface, so that all of the air passing over the cold surface is filtered.
  - not be gravity-type heating or cooling units, such as radiators or convectors.**

...

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**Revise Table 8-1 and notes as shown below. The remainder of Table 8-1 and notes are unchanged.**

**Table 8-1 Design Parameters—Specialized Outpatient Spaces**

Function of Space (f)	Pressure Relationship to Adjacent Areas (n)	Minimum Outdoor ach	Minimum Total ach	All Room Air Exhausted Directly to Outdoors (j)	Air Recirculated by Means of Room Units by type (a)	Minimum Filter Efficiencies (c)	Design Relative Humidity (k), %	Design Temperature (l), °F/°C
SURGERY AND EMERGENCY DEPARTMENT (ED)								
ED public waiting area (FGI 2.8–6.2.3)	Negative	2	12	Yes (q)	A, C, DA	MERV-8	Max 65	70–75/21–24
Triage (FGI 2.8–6.2.2.2 & 6.2.2.3)	Negative	2	12	Yes (q)	A, C, DA	MERV-8	Max 60	70–75/21–24

**Normative Notes for Table 8-1:**

- a. *Room unit* use shall be limited to the type indicated in this column. Where multiple unit types are indicated, a single device with a combination of components may be utilized. *Room units* are acceptable for providing that portion of the minimum total air changes per hour that is permitted by Section 8.1 (subparagraph [a][5]). Because of the cleaning difficulty and potential for buildup of contamination, recirculating room units shall not be used in areas marked “No.” The design of these systems should prevent stagnation and short circuiting of airflow. The design of such systems shall also allow for easy access for scheduled preventative maintenance and cleaning. **Additional supplemental and/or enhanced air treatment technologies in addition to minimum filtration and minimum air change rate standards shall be allowed based on documentation of effectiveness and safety for anticipated space occupants.**

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**Revise Section 8.2.a.5 as shown. The remainder of section 8.2 is unchanged**

**8.2 General Outpatient Facility Requirements...**

- a. Spaces shall be ventilated according to Table 8-2.
- ...
5. For spaces where Table 8-2 permits air to be recirculated by *room units*, the portion of the minimum total air changes per hour required for a space that is greater than the minimum outdoor air changes per hour required component may be provided by recirculating room HVAC units. Such ~~recirculating room HVAC units~~ shall
- not receive nonfiltered, nonconditioned outdoor air;
  - provide the manufacturer’s recommended filter (or MERV-8 as a minimum) for airflow passing over any surface that is designed to condense water. This filter shall be located upstream of any such cold surface, so that all of the air passing over the cold surface is filtered.
  - not be gravity-type heating or cooling units, such as radiators or convectors.**

...

**Revise Table 8-2 and notes as shown below. The remainder of Table 8-2 and notes are unchanged.**



**Table 8-2 Design Parameters—General Outpatient Spaces (g)**

Function of Space (f)	Pressure Relationship to Adjacent Areas (d)	ach Design Option		All Room Air Exhausted Directly to Outdoors (j)	Air Recirculated by Means of Room Units by type (a)	Min. Filter Efficiencies (c)	Design RH% (i)	Design Temperature °F/°C (k)	$R_p$ - $R_a$ Air-Class Design Option		
		Min. Outdoor ach (q)	Min. Total ach (q)						Air Class (q)	$R_p$ cfm/(L·s)/ person and Min. Space Population (q)	$R_a$ cfm/ft/(L·s/m) (q)
GENERAL DIAGNOSTIC AND TREATMENT											
Urgent care triage (FGI 2.5-3.2.3)	Negative	2	3	Yes (r)	A, C, DA	MERV-8	Max 60	70–75/21–24	3	10 (5) / 3	0.18 / (0.9)

**Normative Notes for Table 8-2:**

- a. *Room* unit use shall be limited to the type indicated in this column. Where multiple unit types are indicated, a single device with a combination of components may be utilized. *Room units* are acceptable for providing that portion of the minimum total air changes per hour that is permitted by Section 8.2(a)(5). Because of the cleaning difficulty and potential for buildup of contamination, recirculating room units shall not be used in areas marked “No.” **Additional supplemental and/or enhanced air treatment technologies in addition to minimum filtration and minimum air change rate standards shall be allowed based on documentation of effectiveness and safety for anticipated space occupants.**

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**Revise Section 9.1.a.5 as shown below. The remainder of section 9.1 is unchanged.**

## **9. SPACE VENTILATION—RESIDENT HEALTH, CARE, AND SUPPORT SPACES...**

**9.1 General Requirements.** The following general requirements shall apply for space ventilation:

a. ...

...

5. For spaces where Table 9-1 permits air to be recirculated by *room units*, the portion of the minimum total air changes per hour required for a space that is greater than the minimum outdoor air changes per hour required component may be provided by recirculating *room HVAC units*.

Such ~~recirculating-room~~ *HVAC units* shall

- i. not receive nonfiltered, nonconditioned outdoor air;
- ii. serve only a single space; and
- iii. provide, as a minimum, the manufacturer’s recommended filter for airflow passing over any surface that is designed to condense water. This filter shall be located upstream of any such cold surface, so that all of the air passing over the cold surface is filtered.
- iv. **not be gravity-type heating or cooling units, such as radiators or convectors.**

...

**Revise Table 9-1 notes as shown below. The remainder of the notes are unchanged.**

**Normative Notes for Table 9-1:**

- a. *Room unit* use shall be limited to the type indicated in this column. Where multiple unit types are indicated, a single device with a combination of components may be utilized. *Room units* are acceptable for providing that portion of the minimum total air changes per hour that is permitted by Section 9.1 (subparagraph [a][5]). Because of the cleaning difficulty and potential for buildup of contamination, recirculating room units shall not be used in areas marked “No.” The design of these systems should prevent stagnation and short circuiting of airflow. The design of such systems shall also allow for easy access for scheduled preventative maintenance and cleaning. **Additional supplemental and/or enhanced air treatment technologies in addition to minimum filtration and minimum air change rate standards shall be allowed based on documentation of effectiveness and safety for anticipated space occupants.**

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