

ADDENDA

**ANSI/ASHRAE/ASHE Addendums to
ANSI/ASHRAE/ASHE Standard 170-2017**

Ventilation of Health Care Facilities

Approved by ASHRAE and the American National Standards Institute on October 30, 2020, and by the American Society for Health Care Engineering on October 21, 2020.

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FOREWORD

The committee has reviewed and identified that the standard could better address the varied conditions that arise in planning, designing and implementing airborne infectious isolation rooms, an especially relevant issue as we navigate the many challenges of a world-altering pandemic event. Addendum s specifically ensures that the standard provides flexibility in treating the exhaust discharge arrangements from these spaces, in alignment with CDC guidelines on this topic.

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 s to Standard 170-2017

Revise Section 6.3.2.2 as shown. The remainder of Section 6.3.2 is unchanged.

6.3.2 Exhaust Discharges

6.3.2.1 General. Exhaust discharge outlets that discharge air from AII rooms, associated anterooms, and associated toilet rooms, bronchoscopy and sputum collection and pentamidine administration rooms, emergency department public waiting areas, nuclear medicine hot labs, radiology waiting rooms programmed to hold patients who are waiting for chest x-rays for diagnosis of respiratory disease, pharmacy hazardous-drug exhausted enclosures, and laboratory work area chemical fume hoods shall

- a. be designed so that all ductwork within the building is under negative pressure;

Exception to 6.3.2.1(a): Ductwork located within mechanical equipment rooms. Positive-pressure exhaust ductwork located within mechanical equipment rooms shall be sealed in accordance with SMACNA duct leakage Seal Class A 2.

- b. be located such that they reduce the potential for the recirculation of exhausted air back into the building.

6.3.2.2 Additional Requirements

- a. Exhaust discharge outlets from AII rooms, bronchoscopy and sputum collection exhaust, pharmacy hazardous-drug exhausted enclosures, and laboratory work area chemical fume hoods shall additionally be arranged to discharge to the atmosphere in a vertical direction (with no rain cap or other device to impede the vertical momentum) and at least 10 ft (3 m) above the adjoining roof level.

Exception to 6.3.2.2(a): All room exhaust that first passes through a HEPA filter.

- b. [. . .]

Revise Section 7.2 as shown below.

7.2 Additional Room-Specific Requirements

7.2.1 Airborne Infection Isolation (AII) Rooms. Ventilation for AII rooms shall meet the following requirements whenever an infectious patient occupies the room:

- a. Each AII room shall comply with requirements of Tables 6.4, 6.7.2, and 7.1. AII rooms shall have a permanently installed device and/or mechanism to constantly monitor the differential air pressure between the room (when occupied by patients with a suspected airborne infectious disease) and the corridor, whether or not there is an anteroom. A local visual means shall be provided to indicate whenever negative differential pressure is not maintained.
- b. ~~All air from the AII room shall be exhausted directly to the outdoors.~~

Exception to 7.2.1(b): ~~All rooms that are retrofitted from standard patient rooms from which it is impractical to exhaust directly outdoors may be provided with recirculated air from the room's exhaust on the condition that the air first passes through a HEPA filter.~~

~~e.b.~~ All exhaust air from the AII rooms, associated anterooms, and associated toilet rooms shall be discharged by one of the following methods:

1. Discharged directly to the outdoors without mixing with exhaust air from any other non-AII room or general exhaust system.
2. Discharged into the general exhaust stream, provided the AII exhaust air first passes through a HEPA filter. The HEPA filter, including ductwork and fans, shall be under negative pressure (suction side) for any supplemental fan used to account for filter pressure drop, and all exhaust ductwork shall be kept under negative pressure in accordance with Section 6.3.2.1. (Informative Note: If fans are used/needed due to static pressure drop of HEPA filtration, consideration should be given to the fan operation being interlocked with the general exhaust system fan. Alarms for filter loading and fan failure should be considered.)

~~e.~~ ~~All exhaust air from the AII rooms, associated anterooms, and associated toilet rooms shall be discharged directly to the outdoors without mixing with exhaust air from any other non-AII room or exhaust system.~~

~~d.c.~~ Exhaust air grilles or registers in the patient room shall be located directly above the patient bed, on the ceiling or on the wall near the head of the bed, unless it can be demonstrated that such a location is not practical.

~~e.d.~~ The room envelope shall be sealed to provide a minimum differential pressure of 0.01 in. of water (2.5 Pa) across the envelope.

~~f.e.~~ Differential pressure between AII rooms and adjacent spaces that are not AII rooms shall be a minimum of -0.01 in. of water (-2.5 Pa). Spaces such as the toilet room and the anteroom (if present) that are directly associated with the AII room and open directly into the AII room are not required to be designed with a minimum pressure difference from the AII room but are still required to maintain the pressure relationships to adjacent areas specified in Table 7.1.

~~g.f.~~ When an anteroom is provided, the pressure relationships shall be as follows: (1) the AII room shall be at a negative pressure with respect to the anteroom, and (2) the anteroom shall be at a negative pressure with respect to the corridor.

Revise footnote u under Table 7.1 as shown below. The remainder of Table 7.1 is unchanged.

u. The AII room described in this standard shall be used for isolating the airborne spread of infectious diseases, such as measles, varicella, or tuberculosis. Supplemental recirculating devices using HEPA filters shall be permitted to recirculate air within the AII room to increase the equivalent room air exchanges; however, the minimum outdoor air changes of Table 7.1 are still required. ~~All rooms that are retrofitted from standard patient rooms from which it is impractical to exhaust directly outdoors may be recirculated with air from the AII room, provided that air first passes through a HEPA filter.~~ When the AII room is not used for airborne infection isolation, the pressure relationship to adjacent areas, when measured with the door closed, shall remain unchanged, and the minimum total air change rate shall be 6 ach.

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

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