BSR/ASHRAE Addendum e to
ANSI/ASHRAE Standard 161-2018

Public Review Draft

Proposed Addendum e to Standard 161-2018, Air Quality within Commercial Aircraft

Second Public Review (November 2018)
(Draft shows Proposed Changes to Current Standard)

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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

This proposed addendum removes the hyphen in "high efficiency" in reference to HEPA filters and tempers the statement regarding whether HEPA filters remove bacteria and viruses, all in Section A4.8 (Bacteria and Viruses).

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 e to Standard 161-2018

Revise Section A4.8 (Bacteria and Viruses) in Informative Appendix A as shown below. The remainder of Appendix A in unchanged.

Informative Appendix A
Additional Information on Measures to Address Contamination of the Cabin and Flight Deck during Episodic or Nonepisodic Events

A4.8 Bacteria and Viruses. Aircraft air distribution system design is intended to minimize the spread of people-generated contaminants, including bacteria and viruses, by minimizing the airflow in the fore and aft directions, while providing ventilation to the airplane occupants. In addition, ~~high-efficiency~~ high efficiency particulate air filters (HEPA) on the recirculated air component are standard on most large, new production aircraft but are uncommon on the regional fleet. These filters ~~are designed to~~ may remove bacteria and viruses. Aircraft occupants may be infected by several routes of transmission: proximity, including direct contact (contact with an infected person) and indirect contact (touching an infected surface such as a cup or lavatory door handle and then touching one's mouth or eyes); exposure to aerosols due to proximity (aerosols generated by an infected person that land within a short distance); and, potentially, exposure to smaller airborne particles that are affected by airflow patterns in the cabin. The relative contributions of these transmission routes within the aircraft have not yet been quantified, but an important transmission route is believed to be close proximity. Other variables include pathogen type (i.e., clinically relevant dose) and individual susceptibility to infection. For both routes, the exposure potential, and therefore the risk of infection, will increase relative to the duration of the flight. For the contact route, regular hand washing and avoidance of touching one's face is expected to reduce the risk of infection. For the airborne route, the residency time of infectious agents in the passenger cabin air will be influenced by the total ventilation rate. That is, the greater the per-person total ventilation rate, the shorter the residency time, everything else being the same. Properly installed and maintained HEPA filters are designed to be effective at removing small particulate in the size range of single viruses and clusters and bacteria, which makes the total ventilation flow effective for dilution of particulates. Seating configuration and occupant activity will affect the degree of overlap between occupants' microenvironments. The relative contributions from contact with infected surfaces and airborne exposure should be assessed by a cognizant health organization.