



**BSR/ASHRAE Addendum aj
to ANSI/ASHRAE Standard 62.1-2016**

Public Review Draft

Proposed Addendum aj to Standard 62.1-2016, Ventilation for Acceptable Indoor Air Quality

**First Public Review (February 2019)
(Draft shows Proposed Changes to Current Standard)**

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FOREWORD

The current standard is silent on producing ozone within HVAC equipment. In some countries, ozone generators are accepted as air cleaners. In a recent poll of members of SSPC62.1, only 2% thought that having ozone producing components in a ventilation system is consistent with acceptable indoor air quality.

Ozone is harmful for health and exposure to ozone creates risk for a variety of symptoms and diseases associated with the respiratory tract (Koren et al. 1989; Touloumi et al. 1997; Bell et al. 2004). Many products of ozone homogeneous and heterogeneous reaction processes also create risks for health, including formaldehyde, unsaturated aldehydes (produced during the reaction of ozone with ketones and alcohols), and ultrafine particles (secondary organic aerosols) (Weschler 2006).

Ozone emission is thus undesirable. However, there is no consensus on the safe level of ozone. For example, ASHRAE's Environmental Health Committee (2011b) issued an emerging issue brief suggesting "safe ozone levels would be lower than 10 ppb" and that "the introduction of ozone to indoor spaces should be reduced to as low as reasonably achievable (ALARA) levels." Still, even widely used guidelines are not entirely consistent with all available epidemiological literature on the effects of ozone, and there is relatively little known about the long-term effects of exposure to low concentrations of ozone.

The current state of the science regarding the health effects of ozone strongly suggests that the use of air cleaners that emit ozone by design should not be permitted; the same information and advice is given by the U.S. EPA, among others (EPA 2013). There is more uncertainty about recommendations for air cleaners that do not use ozone by design for air cleaning but produce ozone unintentionally, as a by-product of their operation. There are devices that emit ozone but at the same time reduce concentrations of other harmful contaminants. The state of the science does not allow making highly certain trade-offs between increased exposure to ozone and the ozone reaction by-products and reduced exposure to other contaminants.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~striketrough~~ (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 aj to 62.1-2016

Add new Section 5.7 as shown. Renumber following sections as appropriate.

5.7 Ozone Generating Devices. The use of ozone generating devices shall comply with the following sections.

Exception. Electronic devices used exclusively for the operation of HVAC equipment and controls.

Informative Note: *Ozone generation is expected from ozone generators, corona discharge technology, some ultraviolet lights, electronic devices that create chemical reactions within the system, and some devices using a high voltage (>480v)*

5.7.1 Air Cleaning Devices. Air cleaning devices shall be listed and labeled in accordance with UL 2998.

Informative Note: *The use of devices not intended for air cleaning with the potential to generate ozone should be avoided.*

5.7.2 Ultraviolet Devices. Ultraviolet generating devices in supply air or spaces shall not transmit 185nm wavelengths.

Informative Note: *UV devices utilized in treatment of closed water systems may produce 185nm wavelengths which may generate ozone.”*