



# ADDENDA

**ANSI/ASHRAE Addendum i to  
ANSI/ASHRAE Standard 62.1-2022**

# Ventilation and Acceptable Indoor Air Quality

Approved by ASHRAE and the American National Standards Institute on October 31, 2024.

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ASHRAE obtains consensus through participation of its national and international members, associated societies, and public review.

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- participation in the next review of the Standard,
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## FOREWORD

Table 7-1 lists the following allowed test methods when measuring indoor concentrations of formaldehyde, acetaldehyde, and acetone under the Indoor Air Quality Procedure: ISO 16000-3, EPA TO-11, EPA IP-6, ASTM D5197. These listed methods utilize DNPH (2,4-Dinitrophenylhydrazine) coated cartridges to derivatize the ketone and aldehyde analytes followed by analysis using high-performance liquid chromatography (HPLC) and UV detection. The specified methods can potentially constrain engineers and testing agents when contracting a laboratory to process collected air samples, as local labs may not be equipped to follow the given standards. In order to ensure a wide pool of affordable testing options, Addendum i adds a set of alternative testing methods when testing formaldehyde, acetaldehyde, and acetone. The availability of more affordable testing options, while maintaining rigorous testing standards, will potentially help lower the cost barriers to employing the IAQP in ventilation design.

The method provided for detecting formaldehyde is based on the reaction of formaldehyde and acetylacetone (2,4-pentadione) and ammonia, which produces the derivative 3,5-diacetyl-1,4-dihydrolutidine (DDL) followed by fluorescence detection. Although not as common in the U.S. as the DNPH methods, it is widely used in Europe and has been compared with DNPH results with good agreement. The testing method is compliant with the California Air Resources Board's (CARB) § 93120, European DIN Standard EN-717, and ASTM Methods D-5582 and E-1333. Data correlating the results of the AL4021 monitor with the DNPH method are available for review on the manufacturer's website at <https://www.aero-laser.de/gas-analyzers/hcho-al4021/correlation-with-other-methods.html>.

**Informative Note:** In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~striking through~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

### Addendum i to Standard 62.1-2022

**Modify Tables 7-1 and 7-2 as shown.**

**Table 7-1 Allowed Laboratory Test Methods**

Compound	Allowed Test Methods
VOCs except formaldehyde, acetaldehyde and acetone	ISO 16000-6; EPA IP-1, EPA TO-17; ISO 16017-1; ISO 16017-2; ASTM D6345-10
Formaldehyde, <del>acetaldehyde and acetone</del>	ISO 16000-3; EPA TO-11; EPA IP-6; ASTM D5197 <u>or testing method that is compliant with the California Air Resources Board's (CARB) § 93120</u>
<u>Acetaldehyde and acetone</u>	<u>ISO 16000-3; EPA TO-11; EPA IP-6; ASTM D5197</u>
Carbon monoxide	ISO 4224; EPA IP-3

**Table 7-2 Direct Reading Instruments Minimum Specifications**

	Ozone	PM <sub>2.5</sub>	Carbon Monoxide	Formaldehyde <sup>a</sup>
Accuracy (±)	5 ppb	Greater of 5 µg/m <sup>3</sup> or 20% of reading	Greater of 3 ppm or 20% of reading	<u>0.1 ppb</u>
Resolution (±)	1 ppb	5 µg/m <sup>3</sup>	1 ppm	<u>2% full scale within calibrated linearity range</u>

a. Include the "calibrated linearity range" in all reports.

## **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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As an industry leader in research, standards writing, publishing, certification, and continuing education, ASHRAE and its members are dedicated to promoting a healthy and sustainable built environment for all, through strategic partnerships with organizations in the HVAC&R community and across related industries.

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