



Designation: D7297 – 21

Standard Practice for Evaluating Residential Indoor Air Quality Concerns¹

This standard is issued under the fixed designation D7297; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This standard practice describes procedures for evaluating indoor air quality (IAQ) concerns in residential buildings.

1.2 The practice primarily addresses IAQ concerns encountered in single-family detached and attached (for example, townhouse or duplex design) residential buildings. Limited guidance is also provided for low- and high-rise multifamily dwellings, such as condominiums and apartments.

1.3 The IAQ evaluation procedures are comprised of interviews with the homeowner or resident(s) (including telephone interviews and face-to-face meetings) and on-site investigations (including walk-through, assessment, and measurements). For application practicality, these procedures are divided into three separate phases, which may occur over one or more site visits.

1.4 The procedures described in this standard practice are aimed at identifying potential causes contributing to an IAQ issue or concern. Such findings can be the basis for recommending corrective measures. This standard practice does not describe problem resolution or corrective measures, and the standard is not intended to evaluate the impact of corrective measures.

1.5 This practice describes a pathway for characterizing indoor air, though using this practice does not guarantee that an investigator will be able to identify or resolve an IAQ complaint for one or more of the following reasons: (1) the diversity of sources and contaminants in indoor air; (2) other factors that may affect occupant perception and acceptance of indoor air quality, such as air temperature, humidity, noise, lighting, and psychological stress; (3) the range of susceptibility in the population.

1.6 Implementation of procedures given in this standard requires the investigator (or investigative team) to have adequate background in several areas: general principles of IAQ; interviewing techniques; building design and construction practices; basic understanding of heating and cooling systems

and appliances; use of IAQ measurement equipment; interpretation of IAQ data; and technical report writing.

1.7 Although many elements described in this standard practice may be useful in training of IAQ investigators, it should not be used as the sole basis for specifying or conducting such training.

1.8 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.* For additional safety precautionary information, see Section 6.

1.9 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

[D1356 Terminology Relating to Sampling and Analysis of Atmospheres](#)

[D1357 Practice for Planning the Sampling of the Ambient Atmosphere](#)

[D4861 Practice for Sampling and Selection of Analytical Techniques for Pesticides and Polychlorinated Biphenyls in Air](#) (Withdrawn 2021)³

[D5197 Test Method for Determination of Formaldehyde and Other Carbonyl Compounds in Air \(Active Sampler Methodology\)](#)

[D5438 Practice for Collection of Floor Dust for Chemical Analysis](#)

[D5466 Test Method for Determination of Volatile Organic Compounds in Atmospheres \(Canister Sampling, Mass Spectrometry Analysis Methodology\)](#)

[D5952 Guide for the Inspection of Water Systems for](#)

¹ This practice is under the jurisdiction of ASTM Committee D22 on Air Quality and is the direct responsibility of Subcommittee D22.05 on Indoor Air.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ The last approved version of this historical standard is referenced on www.astm.org.