



Standard Practice for Installing Radon Mitigation Systems in Existing Low-Rise Residential Buildings¹

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1. Scope

1.1 This practice describes methods for reducing radon entry into existing attached and detached residential buildings three stories or less in height. This practice is intended for use by trained, certified or licenced, or both, or otherwise qualified individuals.

1.2 These methods are based on radon mitigation techniques that have been effective in reducing radon levels in a wide range of residential buildings and soil conditions. These fan powered mitigation methods are listed in Appendix X1. More detailed information is contained in references cited throughout this practice.

1.3 This practice is intended to provide radon mitigation contractors with a uniform set of practices that will ensure a high degree of safety and the likelihood of success in retrofitting low rise residential buildings with radon mitigation systems.

1.4 The methods described in this practice apply to currently occupied or formerly occupied residential buildings, including buildings converted or being converted to residential use, as well as, residential buildings changed or being changed by addition(s), or alteration(s), or both. The radon reduction activities performed on new dwellings, while under construction, before occupancy, and for up to one year after occupancy, are covered by Guide E 1465.

1.5 This practice also is intended as a model set of practices, which can be adopted or modified by state and local jurisdictions, to fulfill objectives of their specific radon contractor certification or licensure programs. Radon mitigation performed in accordance with this practice is considered ordinary repair.

1.6 The methods addressed in this practice include the following categories of contractor activity: general practices, building investigation, systems design, systems installation, materials, monitors and labeling, post-mitigation testing, and documentation.

1.7 *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 and health practices and determine the applicability of regulatory limitations prior to use.* See Section 6 for specific safety hazards.

2. Referenced Documents

2.1 ASTM Standards:

E 631 Terminology of Building Constructions²

E 779 Test Method for Determining Air Leakage Rate by Fan Pressurization²

E 1465 Guide for Radon Control Options for the Design and Construction of New Low-Rise Residential Buildings²

E 1745 Specification for Plastic Water Vapor Retarders Used in Contact With Soil or Granular Fill Under Concrete Slabs³

E 1998 Guide for Assessing Depressurization-Induced Backdrafting and Spillage from Vented Combustion Appliances³

2.2 Government Publications:

EPA "A Citizen's Guide to Radon (Second Edition)," EPA 402-K92-001, May 1992⁴

EPA "Consumer's Guide to Radon Reduction," EPA 402-K92-003, August, 1992⁴

EPA "Home Buyers and Sellers Guide," EPA 402-K-00-008, July 2000⁴

EPA "Handbook, Sub-Slab Depressurization for Low-Permeability Fill Material," EPA/625/6-91/029, July 1991⁴

EPA "Radon Reduction Techniques for Existing Detached Houses, Technical Guidance (Second Edition)," EPA/625/5-87/019, Revised January, 1988⁴

EPA "Radon Reduction Techniques for Existing Detached Houses, Technical Guidance (Third Edition) for Active Soil Depressurization Systems," EPA/625/R-93-011, October, 1993⁴

¹ This practice is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.41 on Air Leakage and Ventilation Performance.

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² *Annual Book of ASTM Standards*, Vol 04.11.

³ *Annual Book of ASTM Standards*, Vol 04.12.

⁴ Available from the U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460.

