

Radon Control Options in New Homes

**Comparative Advantages and Disadvantages of
 International Residential Code Appendix F and
 ASTM E 1465-07a**

Feature/Requirement	Appendix F	ASTM 1465
Track record of adoption into code	More extensive At least 5 states and dozens of local jurisdictions	None One state by reference only and not yet incorporated into code
In language familiar to builders and code officials	Yes Part of the model code widely used in the U.S.	Limited Not part of a model national building code
Balance of ease of use and details	4 pages long Straightforward and easy to understand but missing critical details that need to be amended	38 pages long Complex and a challenge to builder and code official implementation
Acceptability to builders	Increasingly accepted over 10+ years of existence	Major issue for most builders: Required testing as prerequisite for occupancy
Allows for active soil depressurization (ASD)	Provides for future fan installation and may be amended with further ASD provisions	Yes
Recommends use of a certified mitigator	No	Yes

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**International Residential Code Appendix F
 and ASTM E 1465-07a Comparison**

Feature/Requirement	Appendix F	ASTM 1465
Type of system	Passive ^{1, 2}	Passive or Active
Radon test required before occupancy	No	Yes
- Radon <4 pCi/L required before occupancy	No	Yes
- If ≥4 pCi/L, fan required to lower radon to <4 pCi/L	No ^{2, 3}	Yes
System labeling required	Vent pipe only	Yes
System documentation required	No	Yes

Radon Reduction Technique	Appendix F	ASTM 1465
Basement and slab-on-grade	Subslab Depressurization (SSD)	SSD
Crawlspace	Submembrane Depressurization (SMD) ⁴	SSD or SMD
- Membrane sealing required to walls, overlapping seams and penetrations	No, but tears and punctures must be sealed	Yes
- Membrane required to be protected from traffic	No	Yes
- Air-handling units	Must be airtight	OK if crawlspace radon same as occupied space
Subslab or Crawlspace Ducts	Must be airtight	Not allowed

Other Characteristics	Appendix F	ASTM 1465
Length of document	4 pages	38 pages

¹ Some jurisdictions adopting Appendix F have amended this document to allow active systems

² This requirement could be specified as a condition in a purchase agreement

³ Buyer may install fan

⁴ Unless mechanically ventilated