

~ ASHI RADON MITIGATION SYSTEM INSPECTION CHECKLIST ~

Client: _____ Date: _____

Address: _____

I. INSPECTION RESULTS (check only one of A, B or C)

9 A. This home appears to have an **active** radon mitigation system*

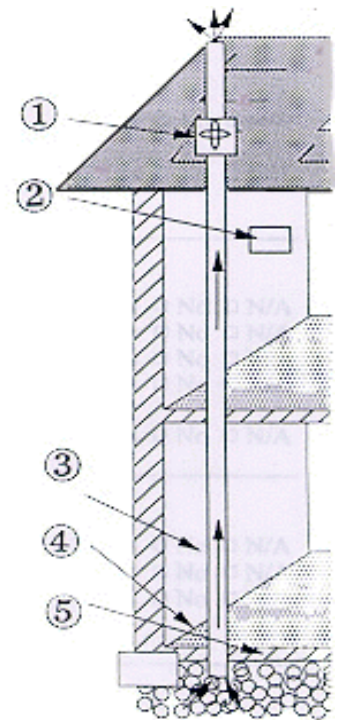
- Test the home's indoor air to verify that the radon level is below 4 pCi/L.
- If all inspection elements are checked "yes" (or n/a), the system likely conforms with recommended design/installation and operating standards.
- If any of the inspection elements are checked "no" the system may not conform with recommended design/installation and operating standards. If so, have a qualified radon mitigator inspect and repair or upgrade the system, as needed.

9 B. This home appears to have a **passive** radon mitigation system*

- Test the home's indoor air to verify that the radon level is below 4 pCi/L.
- If all inspection elements are checked "yes" (or n/a), the system likely conforms with recommended design and installation standards.
- If any of the inspection elements are checked "no" the system may not conform with recommended design and installation standards. If so, consider having a qualified radon mitigator repair or upgrade the system. If the test result is 4 pCi/L or more, you should activate the system; have a qualified mitigator install a vent fan and warning device. Retest after activating the system.

9 C. This home appears to **not** have a radon mitigation system of any kind.

- Test the home's indoor air for radon. If the result is 4 pCi/L or more, have a qualified radon mitigator install a mitigation system that meets the state's or EPA's *Radon Mitigation Standards* for existing homes. Retest after the system is installed.



*An **active** radon mitigation system has four basic elements: (1) an electric vent fan (located outside of conditioned space, i.e., in the attic, garage or outside the building envelope); (2) a system failure warning device (may also be in the basement); (3) a vent pipe running between sub-slab gravel up to above the roof or eave; and, (4) sealed and caulked cracks and joints. The estimated life of a quality vent fan (operating continuously) is 10 years. In an existing home, the vent fan, wiring and piping are all part of the same installation. A **passive** system (installed at the time of construction) has: (3) a vent pipe extending from the sub-slab gravel up to above the roof or eave; and, (5) a physical barrier (polyethylene membrane) between the soil and house foundation.

II. CONSUMER INFORMATION. The American Society of Home Inspectors (ASHI) recommends that home owners and home buyers test their current or prospective home for the presence of radon gas in indoor air. The U.S. Environmental Protection Agency (EPA) *strongly recommends* that steps be taken to reduce indoor radon levels when test results are 4 picocuries per liter (pCi/L) of radon in air, or more. The National Academy of Sciences (NAS) has estimated that each year in the U.S., between 15,000 and 22,000 people die from radon related lung cancer. Exposure to radon is the second leading cause of lung cancer after smoking.

Got a question about these inspection results? Contact your state radon office or local building department (see reverse) or visit <http://www.epa.gov/iaq/contacts.html>. Your state can help you find a qualified provider of radon services. Some states require radon services providers to be certified, licensed or registered. Some states may have specific conditions applicable to radon measurement or mitigation, e.g., allow only home owners or qualified professionals to test for radon. If buying or selling a home, read EPA's *Home Buyer's and Seller's Guide to Radon*. If fixing a home, read EPA's *A Consumer's Guide to Radon Reduction*. These and other publications on indoor air quality are available at <http://www.epa.gov/iaq/>. You can also call the **Indoor Air Quality (IAQ) Clearinghouse** at 1-800-438-4318 for help. For more information on home inspection, visit ASHI online at <http://www.ASHI.com>.

About this Checklist. The main purpose of this *Radon Mitigation System Inspection Checklist*, is to educate home inspection clients about radon, and to encourage radon testing and mitigation when elevated radon levels (4 pCi/L or more) are found. The *Checklist* also helps to determine whether an existing system may need to be repaired or upgraded. The *Checklist* is not a comprehensive inspection tool. It does not replace, nor is it a substitute for, mitigation system inspections conducted or required by state or local governments or agencies.

Prior to 1989, EPA had no specific recommendations on the design of an effective mitigation system or how it should be installed. Between 1989 and 1991, EPA did make such recommendations, and allowed locating radon vent fans in basements. However, in 1991, EPA codified its earlier recommendations, including research results, and published the *Radon Mitigation Standards*. After 1991, radon vent fans were to be located only in unconditioned spaces, e.g., an attic or outside the building.

This *Checklist* is based upon EPA's *Radon Mitigation Standards* (EPA 402-R-93-078, Revised April 1994), the *Model Standards and Techniques for Control of Radon in New Residential Buildings* (EPA 402-R-94-009, March 1994), and radon control methods contained in residential construction codes. Also, this *Checklist* incorporates elements from several state radon inspection checklists (e.g., those of Pennsylvania, New Jersey, Iowa). This *Checklist* was developed by the American Society of Home Inspectors (ASHI) under cooperative agreement with the U.S. Environmental Protection Agency (EPA), is in the public domain, and should be reproduced in its entirety.

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III. INSPECTION ELEMENTS

U (1) Vent pipe size/type and labeling

- 9 Vent pipe/fittings appear to be PVC, ABS (or equivalent; down spout OK outside). 9 Yes 9 No 9 N/A
- 9 Vent pipe diameter is approximately 3-4". 9 Yes 9 No 9 N/A
- 9 Vent pipe labeled as "radon reduction system"; on each level where pipe is visible. 9 Yes 9 No 9 N/A

U (2) Vent pipe location and installation

- 9 Vent pipe appears to extend at least 10-feet above the ground, and at the exhaust point to end above the eave/roof (12-24" is typical). 9 Yes 9 No 9 N/A
- 9 Vent pipe appears to end at least 10-feet from any opening into conditioned space (e.g., window or door), or at least 2-feet above any such opening. 9 Yes 9 No 9 N/A
- 9 Vent pipe appears to end at least 10-feet from any opening into conditioned space (e.g., window or door), in an adjacent or nearby building. 9 Yes 9 No 9 N/A
- 9 Fire collar/damper appears to be present if vent pipe penetrates fire rated wall. 9 Yes 9 No 9 N/A
- 9 A short rough-in vent pipe ending above the slab within the basement is capped. 9 Yes 9 No 9 N/A
(This type of vent pipe is not an approved installation. As a safety precaution the vent pipe should be capped or sealed to prevent radon entry. These installations are incomplete and a consequence of non-conformance with recommended standards; see **About This Checklist** on the obverse.)

U (3) Vent pipe system integrity

- 9 Pipe, fittings/connections appear to be air tight, properly joined/sealed. 9 Yes 9 No 9 N/A
- 9 There are no visible openings or breaks in the pipe system. 9 Yes 9 No 9 N/A
- 9 A pressure monitor is present and operating, and is accessible. 9 Yes 9 No 9 N/A
(In active systems only; a non-electric instrument, e.g., U-Tube manometer, cylinder, or gauge; or an audible instrument.)

U (4) Vertical vent pipe penetration(s) (to subsoil beneath the basement floor or slab)

- 9 The sealing/caulking around the vent pipe in the basement floor is intact. 9 Yes 9 No 9 N/A
- 9 A vertical or horizontal vent pipe penetration is present in a (full or partial) crawl space. 9 Yes 9 No 9 N/A
- 9 The crawl space vapor barrier (soil-gas-retarder, e.g., polyethylene) appears to extend to the foundation walls, and the seams appear to be overlapped by at least 12". 9 Yes 9 No 9 N/A

U (5) Electrical (for active systems only)

- 9 Vent fan plugged cord connection appears to be no more than 6-feet long. 9 Yes 9 No 9 N/A
- 9 Vent fan plugged cord connection is visible, and not concealed within a wall. 9 Yes 9 No 9 N/A
- 9 If outside the building, the vent/mitigation fan is hard wired to a disconnect switch. 9 Yes 9 No 9 N/A
- 9 Vent fan appears to be wired into a non-switched circuit. 9 Yes 9 No 9 N/A
(That is, not wired through any other switches, e.g., lighting wall switch.)
- 9 The circuit/breaker controlling (hard-wired) vent fan is labeled "Radon System". 9 Yes 9 No 9 N/A

U (6) Vent or Mitigation Fan(s) (for active systems only)

- 9 If outside, the fan is not below ground (e.g., in a pit). 9 Yes 9 No 9 N/A
- 9 Vent fan is mounted in a vertical (not horizontal) section of pipe. 9 Yes 9 No 9 N/A
- 9 If inside, the fan is located in an unconditioned space, e.g., the attic. 9 Yes 9 No 9 N/A
(A fan located in the basement does not meet post-1991 EPA recommendations or standards.)

U (7) Sump

- 9 If the sump is sealed, a trapped drain (or equivalent) should be present and located in the sump cover. (Independent of whether the vent pipe(s) passes through the floor/slab or is installed in the sump.) 9 Yes 9 No 9 N/A

NOTES/RECOMMENDATIONS:

State Radon Office

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