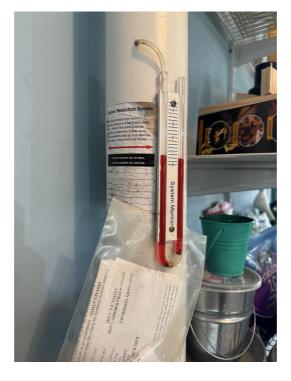
PRECISE INSPECTING 717-808-5997 Bill@PreciseInspecting.com http://www.PreciseInspecting.com





RADON SYSTEM INSPECTION





Inspector Matthew Haughery ASHI, #267507 717-808-5997 Bill@PreciseInspecting.com

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SUMMARY





SUMMARY

The active radon system failed in 5 of the 24 points used to perform this inspection. I recommend the following steps be taken by a licensed radon mitigation specialist to update the existing mitigation system:

- 1. 1. Attach a "Radon reduction system" label to the basement vertical pipe.
- 2. 2. Examine the pipe joints located in the attic to determine if repairs should be made to the joints of bring them up to currant standards.
- 3. 3. Rewire the power supply to the fan in order to achieve a dedicated circuit.
- 4. 4. Attach a folder to the radon pipe that can begin to hold documentation on work done on the system.
- 5. 5. Perform a 48 hour radon test in the home and save the results to the folder created in #4 above.

- O 3.1.1 System Components Vent pipe size, type and labeling: System labels missing
- O 3.5.1 System Components Electrical: Radon circuit breaker not labeled
- 3.6.1 System Components Mitigation Fan: Fan not working
- ⊖ 3.7.1 System Components Sump drain: Condensate drain no trap
- 4.2.1 Past Test results and documentation Available past test results: No recent test results present

1: OVERVIEW

Information

YOUR REPORT

Thank you for choosing **Precise Inspecting**, **LLC** (PI) to inspect your **radon mitigation system**. Please carefully read your entire report. This report is based on an inspection of the visible portion of the mitigation system at the time of the inspection with a focus on system function, not on current building or municipality codes.

To fully benefit from reading the report be sure to click on the each of these three tabs throughout the report:

- 1. Overview this is the Pas/Fail score
- 2. Information this is where the pictures are
- 3. Standards this is the standardized inspection list



OBJECTIVE AND SCOPE

The inspector shall inspect the readily accessible, visually observable, installed **radon mitigation system**, as specified in the ASHI Radon Standard. The inspector shall issue a written report, using a medium and a format selected by the inspector.

The objective of a radon mitigation system inspection is to determine the condition of the radon mitigation system at the time of the inspection. An inspection of a radon mitigation system using this Radon Standard is visual, and is not technically exhaustive; is general, and does not include government laws and regulations that affect the radon mitigation system, other industry standards and guidelines, or manufacturer's installation instructions.

Furthermore, it does not evaluate or determine the functionality, adequacy, effectiveness, or efficiency of the inspected radon mitigation system. It does not evaluate, determine, or speculate about the present and future health effects of exposure to radon including, but not limited to, radon that may be emitted from the radon mitigation system; and does not include measurement of radon levels, unless the inspector and client specifically agree in writing to include this additional service.

GENERAL LIMITATIONS AND EXCLUSIONS

A. **The inspector is not required** to perform actions, make determinations, or make recommendations unless specifically required by this Radon Standard.

B. An inspection of a radon mitigation system using this Radon Standard is not required to identify or to report:

1. latent defects, consequential damages, and cosmetic issues,

2. components that are concealed or otherwise not visible, or that are not readily accessible,

3. the condition of components that are not part of the radon mitigation system,

- 4. radon mitigation system documentation that is not available, and
- 5. components that were not inspected by reason of 5.D.4.

C. The inspector is NOT required to determine:

1. methods, materials, and costs of corrections,

2. future conditions including, but not limited to component failure and the

remaining life expectancy of components,

4. presence of environmental hazards including, but not limited to,

allergens, toxins, carcinogens, electromagnetic radiation, noise, radioactive substances including radon, and contaminants in building materials, soil, water, and air,

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5. whether any item, material, condition, or component is subject to recall, controversy, litigation, product liability or other adverse claim or condition, and

6. compliance of radon mitigation system with past and present requirements and guidelines (codes, regulations, laws, ordinances, specifications, installation and maintenance instructions, use and care guides, etc.).

1. perform any act or service contrary to law or regulation;

2. perform any trade or any professional service other than as required in this Padon Standard:

this Radon Standard;

3. provide warranties or guarantees of any kind;

4. perform any procedure or operation or to enter any area that may, in the

opinion of the inspector, be dangerous to the inspector, to other persons, or

that may cause damage to the property or to components;

5. move personal property, plants, soil, snow, ice, or debris;

6. dismantle any radon mitigation system component; and

7. determine causes of or reasons for the condition of radon mitigation system components.

THIS REPORT IS NOT A WARRANTY

Receipt of this report by any purchasers of this property other than the party(ies) identified on the cover page of this report is not authorized by the inspector. The inspector strongly advises against any reliance on this report by such party(ies). We recommend that you retain a qualified radon mitigation inspector to provide you with your own inspection and report on this property. Liability under this report is limited to the party identified on the cover page of this report. The Inspection and the Inspection Report do not constitute and shall not be considered to be a warranty, either expressed or implied, concerning the present or future condition of the radon system, the presence or absence of latent or hidden defects that are not reasonably ascertainable in a competently performed inspection, or the remaining useful life of any system or component of the property. This report is not binding unless the pre-inspection agreement has been signed by the client and returned to Precision Inspecting, LLC along with payment of the inspection fee.

CONSUMER INFORMATION

The American Society of Home Inspectors (ASHI) recommends that homeowners 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 the indoor radon level in your home when the test result is 4 picocuries per liter (pCi/L) of radon in air, or more. The Environmental Protection Agency estimates that about 21,000 lung cancer deaths each year are radon-related (see www.epa.gov/radon/risk_assessment.html). Exposure to radon in indoor air is the leading cause of lung cancer among non-smokers and the second leading cause of lung cancer after smoking.

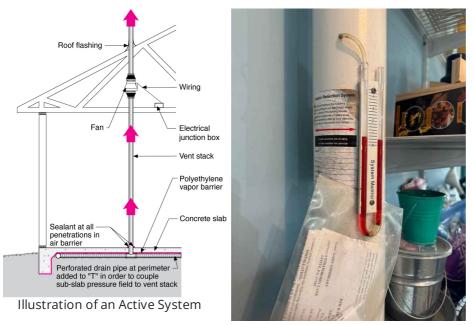
Consumer Guide to Radon Reduction

2: SYSTEM DESCRIPTIONS

Information

General: Active System

Active system - 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.



3: SYSTEM COMPONENTS

		Pass	Fail	Recommend	Not Pres
3.1	Vent pipe size, type and labeling			Х	
3.2	Vent pipe location and installation	Х			
3.3	Vent pipe integrity	Х			
3.4	Vertical vent pipe penetrations	Х			
3.5	Electrical	Х		Х	
3.6	Mitigation Fan		Х		
3.7	Sump drain		Х		
Pass = Conforms Fail = Does not conform Recommend = Recommendations Not Pres = Not Present					

Information

Full basement	Garage, Attic	Sump-pit
Vent pipe size, type and labeling: Type PVC	Vent pipe size, type and labeling: Size 3", 4"	

Vent pipe size, type and labeling: "Radon reduction system" label

Not labeled

The label "Radon Reduction System" should appear on each level where pipe is visible.

Vent pipe location and installation: Vent pipe length and location

Yes

Vent pipe should extend at least 10-feet above the ground, and at the exhaust point to end above the eave/roof (12-24" is typical).

Vent pipe location and installation: Vent pipe proper distance from openings

No access under porch, Yes

Vent pipe must be at least 10-feet from any opening into conditioned space (e.g., window or door), or at least 2-feet above any such opening.

Vent pipe location and installation: Vent pipe end not near adjacent building

Yes

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.

Vent pipe location and installation: Fire collar

n/a

Fire collar/damper appears to be present if vent pipe penetrates fire rated wall.

Vent pipe location and installation: Rough in pipe

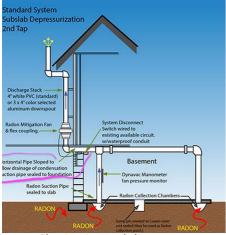
No

A short rough-in vent pipe ending above the slab within the basement is capped. (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.

Vent pipe integrity: Horizontal piping slopes to inside

Slopes to inside

The radon piping system should slope towards the inside of the building so that moisture (condensation) drains inside toward the foundation.



Slpoing inward diagram

Vent pipe integrity: Fittings/joints Vent pipe integrity: No visible

properly joined/sealed

Yes

openings Yes

Pipe, fittings/connections appear to be airtight, properly joined/sealed. There are no visible openings or breaks in the pipe system.

Vent pipe integrity: Pressure monitor present, operating and accessible

Garage Yes

> A pressure monitor is present and operating, and is accessible. (In active systems only; a non-electric instrument, e.g., U-Tube manometer, cylinder, or gauge; or an audible instrument.)



Vertical vent pipe penetrations: Crawlspace vapor barrier

n/a

The crawl space vapor barrier (soil-gas-retarder, e.g., polyethylene) should extend to the foundation walls, and the seams should be sealed and overlapped by at least 12".

Vertical vent pipe penetrations: Sealant at vent pipe(s) intact

Yes

In the basement/crawlspace floor the sealing or caulking around the vent pipe is intact.

Vertical vent pipe penetrations: Vent pipe in crawlspace

n/a

A vertical or horizontal vent pipe penetration is present in a (full or partial) crawl space.

Electrical: 6' vent fan cord or less

Yes

Vent fan plugged cord connection appears to be no more than 6-feet long.

Electrical: Vent cord visible

Yes

Vent fan plugged cord connection is visible, and not concealed within a wall.

Electrical: Fan hardwired to disconnect switch

Yes

If outside the building, the vent/mitigation fan should be hard-wired to a disconnect switch.



Electrical: Circuit breaker labeled "Radon System"

No

The circuit/breaker controlling (hard-wired) vent fan should be labeled "Radon System".

Electrical: Fan on non-switched circuit

n/a

Vent fan appears to be wired into a non-switched circuit. (That is, not wired through any other switches, e.g., lighting wall switch.)

Mitigation Fan: Fan above ground Mitigation Fan: Fan mounted

Yes vertically If outside, the fan is not below ground (e.g., in a pit).

Vent fan is mounted in a vertical (not horizontal) section of pipe.



Mitigation Fan: Fan operational

No

The fan should be operational as indicated by a positive level on the manometer or by listing to the fan operating.

Mitigation Fan: Interior fan located in unconditioned space

Yes

If inside, the fan should be located in an unconditioned space, e.g., the attic. (A fan located in the basement or garage does not meet post-1991 EPA recommendations or standards.)

Sump drain: Trapped drain at sump

No

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.)

Comments

3.1.1 Vent pipe size, type and labeling

SYSTEM LABELS MISSING



- Recommendations

BASEMENT 2 LOCATIONS

At the time of the inspection there was one or more radon system labels missing. The label radon reduction system is to appear on each level where a pipe is visible. I recommend a qualified professional to evaluate and correct.



Rear Left Side Basement

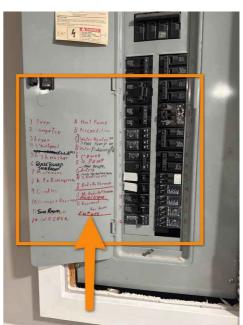
Middle Basement

3.5.1 Electrical

RADON CIRCUIT BREAKER NOT LABELED

MAIN PANEL

I could not locate a breaker that was labeled as a dedicated circuit for the radon system. It is recommended that a dedicated breaker installed in the panel that identifies the radon system. While not required by the PA DEP Radon Division I recommend installing this label.

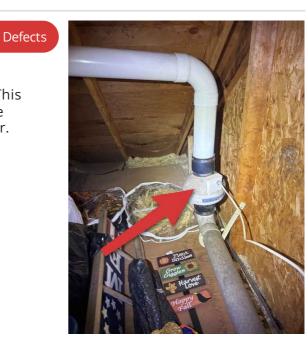


Radon fan circuit not identified

3.6.1 Mitigation Fan FAN NOT WORKING

GARAGE ATTIC

I observed that the radon fan did not appear to be running. This makes the system in-effective in removing radon gas from the structure. A Qualified professional should evaluate and repair.



3.7.1 Sump drain

CONDENSATE DRAIN - NO TRAP

BASEMENT UTILITY ROOM

A condensate drain emptied into the sump pit. A trap (filled with water) in the lid of the sump pit keeps radon gas from escaping into the room. A qualified professional should evaluate and repair.





Check pit and perimeter foundation drain there is no leakage from below slab

4: PAST TEST RESULTS AND DOCUMENTATION

		Pass	Fail	Recommend	Not Pres
4.1	Available Radon Documents		Х		
4.2	Available past test results		Х		
	Pass = Conforms Fail = Does not conform Recommend	= Recomme	endatio	ns Not Pres = Not	t Present

Information

Installation and Operating	Test result documentation within	Written description of work
instructions	two years	performed
Present	Not present	Present
PCI/L level	Available Radon Documents: Past	
Not available	Radon Documentation	

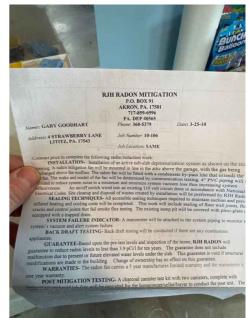
Defects

Comments

4.2.1 Available past test results

NO RECENT TEST RESULTS PRESENT

PA DEP recommendations call for testing of active radon mitigations systems to be done every two and records of these tests are to be held "on site" on the radon system pipe. These records were not present. I recommend a radon test be performed to bring the current system into compliance.



Installed in 2010

5: SUMMARY AND RECOMMENDATIONS

Information

Overall System: Does not conform

<u>SUMMARY</u>

The existing system does not meet the recommended design/installation and operating standards for a residential radon mitigation system. See red defects in above summary for issues that need to be addressed.

ACTION ITEMS:

Step 1. Perform a radon test the home at each structural zone to verify that the radon levels are below 4 pCi/L.

If the test results are high, proceed to step 2.

Step 2. Have a qualified radon mitigator verify that the system is operating properly, and provide an estimate for repairing or upgrading the system as needed.

STANDARDS OF PRACTICE

Overview

This inspection of the properties radon mitigation system shall us the AMERICAN SOCIETY OF HOME INSPECTORS AUXILIARY STANDARD OF PROFESSIONAL PRACTICE FOR INSPECTING RADON MITIGATION SYSTEMS

System Components

3.1 The inspector shall inspect the readily accessible, visually observable, installed radon mitigation system, as specified in Section 4 of this Radon Standard.

3.2 The inspector shall issue a written report, using a medium and a format selected by the inspector, that:

A. identifies components that are significantly deficient, in the professional judgment of the inspector;

D. provides the reasoning or explanation as to the nature of the deficiencies reported in 3.2.A and 3.2.C that are not self-evident;

E. recommends correction, further evaluation, or monitoring of components identified in 3.2.A and 3.2.C; and

F. identifies components specified for inspection in this Radon Standard that were present during the inspection, but were not inspected, and a reason why they were not inspected.

Past Test results and documentation

3.1 The inspector shall inspect the readily accessible, visually observable, installed radon mitigation system, as specified in Section 4 of this Radon Standard.

3.2 The inspector shall issue a written report, using a medium and a format selected by the inspector, that:

B. reports the absence of an available radon test result completed during the two years before the inspection;

C. reports significant differences between the radon mitigation system documentation and the inspected radon mitigation system, if such documentation is available;