

## **Radon-Pros, LLC**

NEHA-NRPP Certification #104316RMT

Louisville, CO

(303) 726-(303) 726-6828

Fax (303) 379-6909

[www.Radon-Pros.com](http://www.Radon-Pros.com)

[info@Radon-Pros.com](mailto:info@Radon-Pros.com)



**COLORADO'S ACCREDITED RADON  
MITIGATORS ASSOCIATION**

[WWW.CARMA.US](http://WWW.CARMA.US)

## **HOW TO SELECT A RADON MITIGATION CONTRACTOR**

As you will probably only need to use a radon mitigator rarely, you need to ensure that are getting the best and safest end result. Radon mitigation is a highly complex and involved process. This document is intended to help you in selecting a radon mitigator.

### **What is a nationally certified contractor?**

This is an individual who is nationally or state certified who has attended training programs and passed an independent, written examination. Furthermore, they agree to follow the United States Environmental Protection Agency's Radon Mitigation and the American Standards for Testing and Materials Standards that describes what procedures must be or should be followed to maintain their certification.

### **What are the Radon Mitigation Standards?**

This is building-code like document that all certified contractors agree to follow as a minimum level of performance in the radon industry. When you hire a contractor to install a radon system, have them agree to follow these standards. This will ensure that you have a legal basis for resolving improper installation techniques.

### **How do I find a certified radon contractor?**

The best place in Colorado to go is the Colorado Department of Public Health and Environment's web site at <http://www.cdphe.state.co.us/hm/rad/radon/radonlists.htm>.

### **Do all contractors who perform radon reduction have to be certified?**

No. This is a voluntary program that contractor's participate in to improve their knowledge and credibility in the marketplace.

### **Does the EPA regularly inspect contractors with the standards?**

No, they do not. The standards are the means for reviewing questionable installations.

### **How do I know if a person is truly certified?**

They will have an ID card identifying them as being certified. Check the date on the card to be sure that it has not expired. Once a person has been certified, they must fulfill certain continuing education requirements to maintain their status. Note that not everybody on the work crew has to be certified as long as one person is on site who is certified oversees the work.

### **What are key items I should look for in a properly installed radon mitigation system?**

First of all compare all of the elements in a contractor's design to the standard. Here are some things to look for:

1. They use good fans that are low energy consumption fans that are also very quiet. As the fans are operating 24/7, this should be key item in the selection process. The fan should also UL or CSA listed.
2. If the fan needs to be connected into 120 V AC, ensure that the work is done by a licensed electrician. In Colorado, the installation of a 120 volt fan requires an electrical permit and has to be done by a licensed electrician, and often post-installation inspection is done by a local building inspector (unless the fan is plugged into an outlet with a power cord 6 feet long or shorter). Non-code wiring is one of the most frequent means of cutting corners because the low voltage fans cost more than the 120 volt ones or the hiring of a licensed electrician also adds cost. Homeowners often foster this when a contractor asks them if they want to save some money by not bringing up the building code issues. Faulty or incorrect wiring can be very dangerous to you and your family. Be extremely wary of these types of contractors who don't follow building or state license codes. If they knowingly and openly violate codes, what else will they do that they don't tell you about? Further, if improper wiring is the cause of a fire, it may be difficult to get your homeowner's insurance company to cover the costs of repair or rebuilding your home. Instead, many good radon mitigators will hire a licensed electrician or use low-voltage fans that allow them to run the electrical wires to the fan and not need an electrician.
3. Fans can be installed in garages as long as there is no living space above the garage or in attics. Otherwise, the fan has to be installed outside the building.
4. It is recommended that a water diverter is used (especially if the fan and piping is mounted on the side of a building). This helps reduce water from getting into the fan or ice that may have built up during colder months from falling into the fan.
5. If they install a subslab radon mitigation system, ensure that they remove at least 10 to gallons of soil under the slab. This is done to ensure that there is enough permeability to help pull in as much subsoil gases as possible.
6. Ensure that they prime the joints of the piping system before gluing them, or insulate the pipe where it passes through cold attics, or they use inferior grades of PVC plastic (Schedule 40 is what is recommended by the EPA).
7. When mitigating a crawl space, ensure that perforated plastic piping is routed around the area and that a plastic membrane (preferably a cross-linked material) is fully over the plastic. This plastic needs to be properly sealed to the foundation and to any items protruding up through the dirt.
8. To make the exterior system more attractive, it is acceptable to change from piping to metal downspout material so that it more closely looks like your other downspouts.
9. Ensure that the venting of the piping is at least 10 feet off of the ground, is at least 10 feet horizontally or 2 feet vertically away from a window or opening into the home (e.g., a door, bathroom or kitchen vent, or chimney) or is at least 12 inches above a gutter, eave or the roof (if the piping is directed through a roof). The exhaust shall be vertical.
10. Ensure that there is a screen at the exhaust of the piping to prevent animals from crawling into the system (in the winter, the air coming out of the piping will be warm).
11. Ensure that a pressure manometer is installed to allow you to monitor the system performance. Some mitigators will only put in cheap system indicators that only sense a problem with the system is turned off. It will not indicate a problem when it is obstructed, damaged or is in need of service.

12. They seal cracks, joints or openings in the concrete with polyurethane caulk (see below).
13. If the depressurization piping system is routed through a fire wall (e.g., garage wall), a fire barrier has to be installed.
14. Ensure that the piping, fan and circuit breakers are labeled that they are part of a radon mitigation system.
15. Ensure that their warranties not only include the manufacturer's equipment warranty but also how low the radon will be reduced to (4 pCi/l is the recommended maximum level that should be in a home – see below).
16. Ensure that they carry Worker's Compensation or liability insurance. If they do not carry Worker's Compensation Insurance and one of their employees is injured on the job, you may be responsible for medical bills and personal damages. And if they don't have Liability Insurance, you may have a tough time getting someone to pay for any damages that may cause.

### **Why is caulking the cracks and joints in my basement important?**

A properly-performing radon mitigation system will capture the radon coming up through the soil and prevent its ability to get through cracks or joints in the concrete slab. However, what the caulking also does is to prevent air inside the home from being pulled down through the slab. This will mean that the air you paid to be cooled in the summer or heated in the winter will have to be replaced (and cooled or heated) by outside air, costing you much more money over time. So it is beneficial for you to have your radon mitigator seal as many cracks, joints or other openings to the sub-slab dirt as possible.

### **Should I hire someone with considerable experience?**

Not necessarily. Experience is good, but conversely it doesn't mean that inexperience is bad. Many people now entering the radon mitigation field have considerable experience in remodeling or related fields, and may even be licensed general contractors. Although they may have not had a lot of radon experience that does not mean that they are not conscientious contractors who, with training, certification and experience are able to offer you a quality installation.

### **If everyone follows the Radon Mitigation Standards, then shouldn't price be my only consideration?**

No. If you are concerned about a functional, properly installed, durable and aesthetically pleasing installation, then price will not be the only consideration. One contractor may cut corners by using thinner wall pipe, or not caulk as much of your slab as another more conscientious contractor might do. One contractor may not care that a pipe is routed through a hallway where it is exposed, where another one may take the time to run it up through a closet concealing the piping. Remember that the Radon Mitigation Standards are a minimum standard that are not always followed by all contractors. Choose your mitigation contractor carefully.

### **What kind of warranty should I expect?**

Most radon contractors offer performance warranties. They will generally arrange for a short-term test to ensure that they have reduced the radon to less than 4 picoCuries/liter (pCi/l). They will often perform this test themselves for their own information, but they must advise you of the benefit of an independent test that you could perform yourself or hire a radon measurement professional to do it for you.

Furthermore, most radon contractors will also include in their bid a warranty that the radon levels will continue to be below 4 pCi/L for a specified period of time. The

determination of when the system goes out of warranty is often made with the use of a long-term test device placed in the home for one year. Most performance warranties cover the first year of operation. Many warranties also exclude performance capabilities if the basement was modified.

When you evaluate warranties, realize that the only component that can wear out is the fan and its controller. Most of these fans come with a 3 to 5 year warranty from the manufacturer. Once the radon has been reduced to less than 4.0 pCi/L and this has been verified by testing, there is little that can go wrong unless you remodeled your home or change the type of heating system you have. So long-term warranties may be of marginal benefit compared to the cost.

**If I have a radon mitigation system in place, do I have to retest periodically?**

Yes. The EPA recommends that you test every two years after the mitigation system has been installed to check that the system is still working properly.

**Any other advice?**

- Check with local consumer protection based agencies such as the Better Business Bureau.
- Have them carefully explain and document the system routing and appearance to be sure you know what it will look like. Remember the cost of the system is driven more by the amount of finish work you want, rather than the amount of radon that is removed. Make sure that there are no ugly surprises.
- Obtain a copy of the United States Environmental Protection Agency's Consumer Guide along with other publications from the mitigation contractor or from [www.epa.gov/radon](http://www.epa.gov/radon).
- Be leery of contractors who speak poorly of their competition or claim that they are the only ones who know everything. Maybe they are the best in town, but normally contractors that try to build themselves up by tearing someone down have something to hide, like their reputation and lack of ethics.
- Be wary of contractors who ask for the competitors' bids so that they can copy them or provide a quote which may be a few dollars less. The few bucks that you save may not be worth the headaches of dealing with an unethical contractor.

Copyright © 2008-2009 Radon-Pros, LLC. All Rights Reserved.

For more information, go to [www.Radon-Pros.com](http://www.Radon-Pros.com) or call (303) 726-6828.