

Re: Some radon help. Better understanding pressure system.

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- *From:* Douglas Eagleson <eaglesondouglas@xxxxxxxx>
 - *Date:* Sun, 13 Jan 2008 07:04:26 -0800 (PST)
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On Jan 7, 4:25 pm, ceh <cehup...@xxxxxxxx> wrote:

So, I've got some radon problems. Initial level 70. Sorry for the length, trying to be clear.

I've contacted `_pros_` and they run away as fast as possible and they haven't offer any suggestions.

I have a new house about 30x70 with a full basement and a footing down the middle.

I had the radon pipe installed when the house was built, under the floor is large 2" crushed stone.

The basement has 7' concrete foundation walls, almost all of which is underground.

I caulked everything. It seems pretty air tight.

I installed a radon fan and get about 1" of water drop on 1 side of a manometer.

I guess this is 1" of H2O pressure? or is it 2"?

Anyway, there is vacuum pressure. Yet, my radon levels are still around 20.

I drilled some other 1" holes around the perimeter of the basement to make sure that air could circulate via the crushed stone. There is suction for sure. If I hold tissue over the hole it is sucked right in.

So, I'm trying to understand what I should see as far as radon leaving the sub floor.

Once the fan runs for a few minutes shouldn't I get a vapor lock? If I were to go to the exhaust end of the pipe, I should see very little wind after 10 mins or so correct? If not, how is it possible for that much air to get replenished?

Another issue, is at the exhaust in the attic, I didn't want to run it out of the front roof of my house for cosmetic purposes, so I plumbed in more 3" pvc that goes up over the ridge and down the other side and then up again to the final exhaust.

Some bad ascii art to illustrate.

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Could this cause a problem? Is there an issue where the heavy radon gas can't get pushed up over this hump? There is wind coming out of the exhaust on the roof. But is the actual radon part staying in the pipe?

My fan does is rated at 0" h20 @ 160 CFM or 2" h20 at 0 CFM

I installed 2 additional 6" fans 4 feet above the floor. They tie in together to the existing 3" pipe. The new fans are rated 2.5" or 350CFM

Then, My radon levels went up. So, I'm at a loss, and could really use some suggestions.

Some have mentioned piping fresh outside air into the sub floor thus washing the bad air out, but from all the literature I read, you want vacuum pressure more than anything. Even when I open the basement windows and expose the test holes I drilled which are sucking air in like crazy, I barely see any improvement and usually, the levels go up.

Thanks for any insight.
Please don't suggest moving... I've heard that a million times.

Radon is nasty gas to try to seal out. It actually decays to particles while in the house and these particles may be filtered out.

Think about a wall sealer if the basement is unfinished. A gas tight sealer is epoxy, a good industrial supply house could probably get it fairly reasonably priced.

If the basement is finished it is a matter of wall coverings. A replaster with an epoxy coating would be the ticket. Expensive, but you have a real evident radon issue.

You need to make separate vent ducts for the inside air fans. THE subfloor slab should be on its own vent duct. A common problem is making to much air flow into the to small diameter vent duct. Sometimes a false flow happens and it makes the subfloor flow go backwards into the slab from the room.

Epoxy the floor and then hope the subfloor system can function. A better pump would be the first solution. A four inch air pump would allow a greater margin for error.. You have a huge basement so possibly install a second subfloor pump.

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Rotary roots pumps like in old style superchargers make the rating.
They are expensive though. Fans can not make 4 inches!

SO epoxy coat, and a new blower, and hope. Then an subfloor extra
blower

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