

US EPA ARCHIVE DOCUMENT

## Questions and Answers from RRNC Webinar, June 2007

### 1. Do any states require that one be certified to "install" RRNC products?

*Jack MacDonald: Ohio is licensed state but there are exceptions in the rule.*

*Dale Dorschner: No in MN.*

### 2. Who were your "local" experts? Why is a fan "only" installed when required for acceptable concentrations? Why can't a builder install a fan during the construction of the RRNC and have it running for maximum radon prevention, moisture reduction and reduction of other potential soil gases?

*Jim McDonald: In Ohio licensed mitigation contractor are the experts. Even though, the savvy successful builders know the value of the skills their subs possess and the general concept is understood, the technical part is often missed. This holds true for RRNC.*

*Jack Hughes: Installing active systems from the git-go would be permissible under any code I'm aware of, and would be advisable in many cases.*

*Dale Dorschner: In MN we promote that fans be installed in all RRNC, the benefits appear to outweigh the energy cost which is the only reason not to in my opinion. Our premiere builders are installing fans on all their single family homes with RRNC.*

*Clark Duffy: The best local experts are practitioners - builders, doctors, code inspectors, etc.*

### 3. Is there any way to alter IRC to require radon testing after installation of RRNC? Could the IRC specify that RRNC should also be applied to daylight window "basements" as well as slab-on-grade construction for Zone 1 areas that require RRNC in Michigan? In Michigan, RRNC has been adopted for building code but they are not applying this to any slab on grade construction in many of the Zone 1 areas especially for apartments that have daylight windows. If it is required in homes that are in the same zone that have basements - why don't they require it in slab on grade construction of apartments? The only reason I can think of is because it is commercial.

*Jim McDonald: Someone dropped the ball. They all need tested. Reference the Buyers and Sellers Guide, the Surgeon General and the EPA stated policy. If the jurisdiction where the home is to be set up requires IRC Appendix F, I believe the local building official could cause the piping to be added after the home is placed on its foundation, if it was not delivered with the pipe. Today an individual buyer could specify E 1465-06 to require the same radon piping in manufactured homes that would go into a stick built homes; see E 1465-06 section 6.3.4 Manufactured Homes.*

### 4. Why is there no installation of pipe through interior walls of manufactured homes that are placed on foundations in Zone 1 areas where they require RRNC?

*Phil Anthes: If the jurisdiction where the home is to be set up requires IRC Appendix F, I believe the local building official could cause the piping to be added after the home is placed on its foundation, if it was not delivered with the pipe. Today an individual buyer could specify E 1465-06 to require the same radon piping in manufactured homes that would go into a stick built homes; see E 1465-06 section 6.3.4 Manufactured Homes.*

*Jim McDonald: The education of that industry is obviously needed.*

### 5. Did you receive much opposition from the State Building Officials office at any time? We're being told it is a "consumer issue" in Connecticut.

*Jim McDonald: Wake up Connecticut this is a health issue!*

*Dale Dorschner: In MN we sat on the energy code advisory committee the sister committee to the state residential building code so we were priming them on this issue. Building code officials were on board.*

*Clark Duffy: That is why it worked best at the local level in Kansas.*

### 6. Can the National Builders Association officers be brought into this conversation? The national Real Estate Association is also key. Does the national association for concrete agree with the plastic sheeting under the slab? I think not.

*Phil Anthes: First, NAHB, the National Association of Home Builders, are members of ASTM and did participate in the development of ASTM E 2121-03 and E 1465-06. NAHB officers did not participate directly; they assigned NAHB staff members who voted or had the opportunity to vote when the standards were balloted and different staff members attend ASTM sub-committee and committee meetings during the standards development process. I don't know who from NAHB is currently assigned to ASTM radon standards or other radon organizations and projects. Second, the opinion of the real estate industry is not known to me, I do not remember that they commented on ASTM E 1465-06 or E 2121-03; but that does not mean that they were not aware of the progress of E 1465-06 over the years. They certainly could have participated if they wanted to. I understand that they have been in contact with the U.S. EPA over the years as certain EPA publications, like the "Home Buyers and Sellers Guide" have been developed and revised. Third, I am not familiar with the opinions of the specific concrete association you refer to. I do know that ASTM members, who are representatives of concrete and masonry organizations, have contributed to the development of both E 1465-06 and E 2121-03. Jim McDonald: Builders need to be fed more facts regarding the health consequences.*

**7. Who is a good contact at the National Homebuilders Association to explore collaborative efforts from all states or radon professionals?**

*Phil Anthes: Addressed in question above.*

**8. WV requires radon professionals to report RRNC homes built or modified. West Virginia has radon reporting template posted on web site: [www.wvdhhr.org/rtia/radon.asp](http://www.wvdhhr.org/rtia/radon.asp). Can you tell us how many states have reporting templates, or are there any national templates available for reporting RRNC, Mitigation methods, test pre- and post-mitigation?**

*Jim McDonald: Ohio has a form that we must submit quarterly.*

*Dale Dorschner: MN is looking into doing something similar but to date does not have it in place.*

**9. Who is qualified to present adequate training to contractors or homeowners who prefer to work on their own homes on methods for RRNC modifications to existing homes or new homes?**

*Jim McDonald: Special consideration should be given to this question due to the quality that needs to be maintained for installation and effectiveness. Also keep in mind we ARE dealing with people's health.*

*Phil Anthes: First, E 1465-06 is written for qualified professional builders and those professionals who support and regulate the residential building industry. The scope of E 1465-06 does state that it is a handbook for do-it-yourselfers. Second, I understand that training on E 1465-06 is in development and should be available from the regional training centers and others. I am not aware of training material about E 1465-06 (or RRNC) aimed at do-it-yourselfers. Also introductory material has been and will continue to be offered.*

*Jack Hughes: Any of the Training Centers can arrange for qualified trainers, and there are others as well.*

**10. Will Kansas try to get the RRNC standards or Appendix F adopted statewide like Minnesota?**

*Clark Duffy: If the state considers statewide building codes we will "piggyback".*

**11. Are there any other municipalities in Kansas drafting RRNC building codes based on Topeka 2006 requirements? Please explain why a state building code is not possible in Kansas?**

*Clark Duffy: Lawrence is now considering a code. Kansas is a strong home rule state. Building codes are considered a local issue.*

**12. As part of your plan to address homes built prior to 2006, is the plan to require mandatory testing for each real estate transaction?**

*Clark Duffy: If testing shows a need that will be the next step.*

**13. How is the Minnesota Building code supposed to affect greater Minnesota when the counties decide whether or not they are going to follow the code?**

*Dale Dorschner: Good Question. Many out state jurisdictions do not adopt state building code so they are not required to follow the state building codes. However since its in the state building many of the jurisdictions with heavy development are covered. I think having RRNC Appendix F in the state building code is setting a good precedent to build on.*

**14. Dale mentioned he did a small comparative study of homes built with only a poly layer below slab, and those with poly and pipe routes (passive/active?), and he compared Rn levels. Can he share that with us?**

*Dale Dorschner: The "study" I referred to was done by two grantees, Olmsted County and St. Johns University - Dan Steck where they compared homes built prior to the building code requiring poly under the slab to those homes built prior to that time frame.*

**15. Does Minnesota have a statewide building code for residential and/or commercial construction that supersedes or takes the place of local codes?**

*Dale Dorschner: No local can adopt the state building code or develop their own. There is no statewide building code that I'm aware of.*

**16. Is MN a licensed state for radon mitigation services?**

*Dale Dorschner: No.*

**17. What is the web site for MN Legislative Rules / for ref. to S.F. 1735?**

*Dale Dorschner: <http://www.leg.state.mn.us/leg/legis.asp>*

**18. Dale, you mentioned that MN will adopt App. F. in its entirety, with little changes. What are the little changes?**

*Dale Dorschner: Still being determined.*

**19. In your experiences (Dale + Clark) what would you change about Appendix F if you could to more easily implement RRNC and oversee the work?**

*Dale Dorschner: I would like to see the requirement of active systems and that the systems be installed by properly trained professionals.*

*Clark Duffy: Appendix F needs to be responsive to local conditions. In Topeka sand is used instead of gravel for base. If the goal is to protect the health of citizens it also needs to apply to apartment complexes.*

**20. Philip, Jim and / or Jack, how do you expect the increase of RRNC, to effect the revenues of existing mitigation firms? And, the effects RRNC will have on new mitigation firms entering the industry? Do you know percentage of those installing RRNC "products" are Radon professionals versus non-Radon professionals? What information can you make available that would help me as a Radon professional, coordinate with local builders as a consultant?**

*Jim McDonald: More exposure can only be good. RRNC is a good way for new mitigators to get educated on construction techniques. I do believe there are more untrained people doing installations than there are trained professionals. The more you disclose the less valuable you are.*

*Jack Hughes: I know of several mitigators doing a lot of RRNC work, and I would expect that trend to continue. Don't know what %-age are certified. Last question sounds like a good topic for our next Radon Forum.*

**21. Great Job! I am a former educator and would be interested in hearing about all training or educating opportunities.**

*Jack Hughes: Contact Jan Carrington, SRRTC Program Coordinator, 800 626 2703.*

**22. What other parameters were measured to assess indoor air quality (besides radon levels)?**

*Jim McDonald: Radon was the only thing measured.*

**23. What evidence exists for other benefits of RRNC, such as decreased humidity/moisture in basements?**

*Jim McDonald: I do not know of any formal studies that have been conducted. I do know that what I have experienced in my business and I hear what homeowners tell me. They tell me asthma attacks are less frequent, air quality has significantly improves, moisture reduced. I do believe this is an aspect of the mitigation process deserving formal study.*

**24. Jim—the gravel you use is quarried stone or natural gravel, which in our state, NY, produces high levels of radon.**

*Jim McDonald: We have not been aware of any elevated levels due to this . (Also known as River Rock or 57s is very abundant in our area and cheap.)*

**25. OH is a licensed state however a builder can have his plumber install the RRNC system without a license. More often than not, his system cannot be used. Dan West, Jim, I was a presenter at the Youngstown Home Builders Association in February. We had a total of two builders present. This event was sponsored by the Mahoning County Health Dept. This was sad!!**

*Jim McDonald: This practice must change. Builders may think they understand the concept but they have overlooked the technical aspects. This is the risk of the Ohio Citizenry. ODOH must look after their citizens first, not they building industry.*

**26. Was the average reading on the bar graph (hope project), a year long average?**

*Jim McDonald: No, it was based upon a 48 or 72 hour test.*

**27. Who provides the warranty for RRNC when the work is divided between a radon professional and the builder?**

*Jim McDonald: Unfortunately I believe in Ohio the licensed holder would untimely be held responsible.*

**28. Is there any tax break given to homebuyers/owners who have a radon system installed in their new home?**

*Jim McDonald: I believe in the past bills have been introduced in both the Senate and Congress regarding tax breaks but unfortunately they are still in committee.*

**29. What CRM was used to test? Is there a requirement for using licensed/certified mitigator to install?**

*Jim McDonald: Honeywell models 127 set on a 1 hour mode. In Ohio a license is required to test and another license is required for mitigation.*

**30. What happens if the agreed radon concentration is NO RADON? This can happen with unsophisticated buyer and seller/ realtors? Do you recommend using the EPA / ASHI (American Society of Home Inspectors) joint developed check list? At what level of radon probability of radon should RRNC be implemented? At 10% is this really cost effective? At probability of 30% or is a cost effective business model. What per cent of houses are below 2, what below 1? What is the average cost for new construction vs. retrofit?**

*Lou Witt: Only in a controlled environment is there "no radon." Yes, the EPA/ASHI checklist is recommended. EPA recommends that all homes in Zone 1 (high radon potential) counties be built with RRNC. ASTM 1465 extends this to Zone 2 (moderate potential) counties as well. The average cost of RRNC for a passive system is \$390, with a typical range of \$200 to \$730. Retrofits average \$1,200 but can vary from a couple of hundred dollars to several thousand.*

**31. How can you guarantee positive lowered results when you do not have a pre-tested reading to work with? Lou Witt, Why did EPA remove standards for testing and mitigation from the EPA**

**web site, appears to be now only for purchase/downloadable? Why is sch. 40 pvc needed at interior of building? Are Radon Mitigation Contractors Licensed by the State?**

*Lou Witt: A single free hard (printed) copy of the ASTM E-2121 standard is available from EPA's National Service Center for Environmental Publications -*

*<http://yosemite.epa.gov/ncepihom/nsCatalog.nsf/SearchPubs?OpenForm>.*

*When ordering EPA's reprint of E-2121 from NSCEP use the EPA document number 402-K-03-007.*

*Copies of the standard may be purchased from ASTM International at <http://www.astm.org/cgi-bin/SoftCart.exe/index.shtml?E+mystore>, or from the American National Standards Institute (ANSI) at [www.ansi.org/](http://www.ansi.org/). Schedule 20 pvc pipe is the minimum, Schedule 40 is recommended as it's more durable. Yes, mitigation contractors are licensed by states.*

**32. How many states have RRNC building codes?**

*Lou Witt: Seven states have codes: CA, FL, MN, NJ, RI, VA, & WA*

**33. Will EPA also provide a directory of certified contractors who provide RRNC installation services?**

*Lou Witt: Builders that use certified contractors will be included, the individual contractors will not be.*

**34. Resource Q: In the absence of a strong or organized Home Builder's Association within a state, what other builder/construction-related organizations could be contacted to obtain support or interest in RRNC code adoption?**

*Clark Duffy: Many builders/contractors are progressive and want to be "state of the art". Find one and most of the battle is done.*

**35. The other benefits of a mitigation system - moisture, improved air quality have been mentioned a couple of times today. If we are serious about risk reduction, why not strongly suggest that active systems be installed in new construction?**

*Phil Anthes: There is anecdotal info on ASD for moisture control, the Auburn study is not yet published. When moisture control is clearly established as a dependable by product of radon soil depressurization systems, and any qualification(s) relating to its moisture control performance become known, special requirements, if any, that could make the moisture control aspect of the radon system work better should be incorporated into the ASTM radon standards.*

**36. Did any presentations discuss the desire of some contractors to install a fan in the vent pipe as a way to provide a "radon ready" system? Current experience suggests this is not a good idea as the fans sit idle and provide a great place for condensation and ice to develop. If an active system is required, the fan should be installed when that information develops and not in anticipation of.**

*Second, you question whether ASTM E 1465-06 is serious about radon reduction because it does not mandate the installation of a radon fan for every situation.*

**Additional comments:**

*E 1465-06 makes it clear that fan-powered radon systems should be expected to outperform passive radon systems. However, ASTM E 1465-06 mandates radon tests to determine, among other things, if installing a radon fan is required to reduce radon concentrations to acceptable levels. When radon concentrations are below acceptable radon levels (which are always below 4 pCi/L or a lower number that has been agreed to by builder and buyer) without the use of a radon fan, no radon fan is mandated. It should be pointed out that IRC Appendix F does not permit the builder to install radon fans or ever mandate the installation of a radon fan. It is the homeowner's (not the builders) responsibility to have radon fans installed according to Appendix F. Building contractors are not permitted to activate their passive radon systems; the homeowner is advised by an "interpretation section" of Appendix F (not by the builder) to have the passive system activated when the passive system does not reduce radon levels to below 4 pCi/L.*