



## **Oregon Mechanical Officials Association**

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### **Monthly Membership Meeting Minutes**

**October 22, 2015**

**Marion County Public Works, Salem**

*The Oregon Mechanical Officials Association is dedicated to providing a professional environment for mechanical code officials and industry professionals to share knowledge and educate each other to enhance the public welfare.*

#### **CALL TO ORDER:**

First Vice President John Corliss called the meeting to order at 12:36 p.m., October 22, 2015.

#### **ATTENDANCE:**

Executive Board members present included: First Vice President John Corliss. Also present were Dave Eubanks, Bob Wentz, Mark Heizer, Troy Skinner, Randy Soelberg, Scott Anderson and OMOA's administrative services manager Cory Cross.

**MOTION: Bob Wentz moved and it was seconded that the minutes from the July 16, 2015, meeting be approved as amended. Motion approved unanimously.**

#### **OMOA COMMITTEE REPORTS:**

*Education Committee:* John Corliss reported on the 2015 Fall Institute. He thought the institute went well, but emphasized that OMOA will not be able to continue putting on the Institute unless more members step up to help. Cory will send the evaluation summaries of the Institute classes to John so he can give a further report at the next meeting.

*Code Change Committee:* No report

*Scholarship Committee:* Troy Skinner suggested that OMOA should support the PCC Building Inspection program with scholarships. Scott Anderson suggested that OMOA representatives should go to PCC and let them know about the OMOA and encourage students to join and participate in the association.

## **CODE DISCUSSION:**

October code discussion, Happy Valley Q & A, and Mark Heizer meeting minute updates have been appended at the end of the minutes.

## **OLD BUSINESS:**

There was no old business.

## **NEW BUSINESS:**

Randy Soelberg said that he thinks the radon section of the code should be changed.

The members discussed ways to do a more vibrant outreach so more people are aware of what OMOA does. Mark Heizer asked if any OMOA members went to the Tri-County meetings in Oregon City. Randy Soelberg suggested that members get email addresses of inspectors in various jurisdictions so they can reach out to more people about OMOA's meetings and code discussions.

The members discussed a new structural support product called CLT (Cross Laminated Timber) that is being developed.

Scott Anderson introduced some ideas for the 2016 OMOA Short School:

- Mechanical Rooms, Refrigerator Rooms, Mechanical Rooms for Boilers/Chillers incorporating combustion air and the Energy Code.
- Hydronics, seismic attachments, support & ceiling insulation, direction of travel. Using electronic technology in the field.

## **ADJOURNMENT:**

The meeting was adjourned at 2:43 p.m.  
Respectfully,

Cory Cross  
Administrative Services Mgr.

**Next OMOA Membership Meeting  
12:30 P.M., Thursday, November 19, 2015  
Marion County Public Works  
Silverton Road, Salem**

## 10/22/15 OMOA Code Discussion

From Happy Valley-

**Crawl-space ventilation/radon mitigation in unusually tall/large areas prone to moisture.**

ORSC Ch 4 and Appx F

(see written Q and A from Mark H. for complete discussion on this one)

Consensus is the local AHJ has the authority to require adequate method/design for approval.

From Dallas-

**Performance duct sealing certification for choosing additional measures #3 or #5.**

Ch 11 section N1101.1

The ORSC changed Table N1101.1(2) footnote b from requiring the work to be done by a contractor certified by Oregon Dept of Energy (ODOE) to a technician certified by the Performance Tested Comfort Systems (PTCS) program administered by the Bonneville Power Administration (BPA).

Q: What are Jurisdictions receiving at final inspections for verification of duct sealing when they have chosen additional measure #3 or #5 from Table N1101.1(2)?

A: Consensus is we should be getting the "PTCS Duct Sealing Certification Form" filled out by a certified technician doing the performance testing of the system. As currently, this form is the only one available from the BPA to satisfy this requirement.

From Corvallis-

**Gas insert installed within a masonry chimney; clearance to cabinets.**

ORSC Ch 18 section M1801.3.4 Exception

Q: Can you build cabinets around a masonry fireplace when a gas insert has been permitted?

A: According to the exception in 1801.3.4, when a listed chimney liner is installed per MII and UL 1777, the clearance for the original masonry chimney do not have to be met. However, clearances from the Manufacturer of the new insert will have to be met.

From Eugene-

### **FYI “New product info”**

An issue at the U of O EMU remodel arose when an inspection was taking place and inspector found a buried gas line under concrete. The piping was covered without a tracer wire so the contractor searched for a solution and found a “Plastic Gas Line Tracer Kit” which is an internal tracer for plastic pipe. It has an abrasion resistant polymer jacket over fiberglass over 22 AWG copper wire. The tracer is said to be listed and approved as a retro-fit tracer wire inserted into the gas piping.

### **Shared Type I Hood duct for three fast food restaurants.**

OMSC Ch 5 section 506.3.5

Q: Can one store open while other two are still under construction?

A: Section 506.3.5 has clear conditions where a shared duct system could be allowed. First, all interconnected hoods are located within the same story. Second, All interconnected hoods are located within the same room or in adjoining rooms. Third, Interconnecting ducts do not penetrate assemblies required to be fire-rated. And Fourth, The grease duct system does not serve solid-fuel-fired appliances.

After meeting all the above requirements, plus dampers meeting UL 710 where included and part of the listing of the hoods, and the suppression system was tested and approved, and all OESC requirements are met for variable speed exhaust and makeup air, the consensus is yes if hazards from that hood could be isolated from the rest of the system.

### **Hearth Extension material for wood stoves.**

ORSC M1410.2, OMSC 903.2, 905.3

Q: Can a carpet pad sold by the Heating supply store be used as a hearth extension.

A: As long as it meets the UL 1618 standard, is listed and labeled for that use, and installed as per MII.

### **Existing factory-built chimney compatibility with new EPA Wood Stove**

Q: Are you required to install a new factory-built chimney when replacing old wood stove with a new EPA compliant wood stove?

A: Because there is a temperature rating of 1700°F for older wood stoves and newer stoves have a higher temperature rating of 2100°F there may be concerns. Both ORSC 1005.3 and OMSC 805.2 require the chimney to be type HT and meet UL 103 standard. Mark Heizer agreed to research this topic and have more info at the next meeting.

Dear members and associates,

A most unique challenge has appeared in Happy Valley as follows;

Since the 2014 ORSC has been utilized we have had major pushback from concrete contractors who now do not have the reduction in ventilation previously allowed for underfloor spaces, due to having a radon county designation (R408.1). I had a large house last week that required 46 foundation vents. As an alternate they chose to provide the 1.0 cfm/50 sq. ft mechanical ventilation underfloor. The question that arose from that decision is, "If a contractor provides the mechanical ventilation do they also have to include foundation vents? And if so, how many?" There does not appear to be any code language in either this section of chapter 4, nor is any guidance apparent in Appendix F. Shouldn't there be cross ventilation even when using a mechanical venting alternative (assuming a typical installation of two vents for the supply and the discharge end of the ventilation system) OR is a simple fan without any exterior vents adequate to prevent moisture and radon accumulations under the structure? The latter choice has proven not to work in many homes where it has been used in HV. Moisture accumulations and lack of air changes to the outdoors have created rot problems under several homes, typically discovered by a real estate home inspector during a sale. How does a homeowner know if the fan is not working? Can the radon fan, used to develop the venting of radon in the passive systems, substitute and be sufficient for Exception #2 in chapter 4? If we have a large crawlspace is the mechanical ventilation sufficient to allow air movement in areas where it becomes difficult to vent, like an inside or outside corner? How adequate is the air movement in I-Joist floor systems where there are sheeted cripple shearwalls that extend to strip footings? And if we're not required to have foundation vents per exception #2 of chapter 4, are we just pushing radon around our crawlspaces where it has escaped the sub-membrane passive system required by the appendix?

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My primary question(s) remain unanswered however.

1. If we have a closed crawlspace (no vents) and provide a mechanical air circulation system in lieu of said vents, am I reducing humidity in my crawlspace during months of wet weather found roughly 6 months of the year in the western Oregon valley?

Answer: Yes. Typical home crawl space humidity will be dry enough to prevent moisture/rot issues with structure. Vapor passing through and around retarder on floor (required in Oregon) is less than what is absorbed by air movement.

- Ventilation of two types: from building (HVAC or other source then exhausted) or from outdoors and exhausted
- Caveats: low turnover rate when the crawlspace is 6-ft high. Code written with a crawl space in mind. Exhaust is based on CFM/SF, so air turnover is lower.

Part 2) If I have a submembrane passive radon system AND the closed air circulation system described above am I preventing adverse levels of radon inside my crawlspace IF the gases somehow migrate through or around my membrane?

Answer: Most likely, yes. Exhaust flow (per my understanding of the model code and Oregon code) was to set the mechanical exhaust at rate to equal the "average" air movement and dilution through the foundation vents (1 SF vent opening/150 SF).

- BUT see response for Part 3 (I added this).
- Submembrane vent is there to reduce radon likelihood; power is still required if the homeowner gets high radon reading. Likely to prevent build-up of gases.

Part 3) If not, what method is available to me to improve the ventilation and reduction of potential radon gases to my crawlspace? Appendix F says that **if I have vents in my foundation walls**, then the closures have to be removed (AF103.5.2.2) so the inference of this section seems to suggest that it is possible to have radon accumulations in my crawlspace whether I have a perfectly installed passive system or not.

- AF10103.5.1.1 and AF103.5.2.1 BOTH say that "Crawl spaces shall be provided with vents to the exterior of the building...." Neither says "if". So in Appendix F territory, a crawl space has to be vented (and at 1SF/150 SF; no reductions allowed).
- Was this the intent? I don't think so.
- So what can be done: From my read, anything else is an AMM.
- Likely read from BCD on an unvented crawl spaces (i.e. without sidewall vents): There must be the venting (air IN; duct leakage OK) and EXHAUST of crawl space (current allowance under R408, Exception 2. NOTE: allows an approved ground cover material. Overlapping and taping could be required). Compliance with alternate means using passive sub-slab (AF103.5.1.2: retarder and vent to roof... can look to AF103.6.2 for multiple vent pipes if multiple soil coverage areas. This system provides:
  - Extra vent of moisture/vapor through submembrane system.
  - Radon leaking past soil membrane (again, taping at pipe penetrations and seams can be considered) is exhausted/diluted in the crawl space similar to a vented crawl.
  - Whether basic "vented" crawl space or a mechanically vented crawl space: IF your home site is "hot", you may get a high reading. When a homeowner gets a high reading, the subsoil system can be modified as an active system. At this point, the space under the membrane is at a negative pressure (removing vapor and radon) and the crawl space is at

a negative pressure. Air movement will be migrating out of the home toward the crawl, not from the crawl to the home.

- Per Code, “closures” must be removed/can’t be provided so that passive cross ventilation can operate at all times. Intended to prevent people from overriding side wall vent passive system.
- Get rid of the closures and you need a different system:

I don’t find additional recommendations or code language to direct me (et al) if the air circulation system only is used in my crawlspace, especially as it pertains to the potential for radon gases to accumulate under my house with this method of ventilation.

- See Part 3)

Part 4) Should BCD look at providing an alternate formula, more generous than the 1:150 ratio, for venting crawlspaces if a continuous run fan is installed under the house? Some foundation vents and the fan vs. 14+ foundation vents in 1100 sq. ft house footprints? Builders do not like to install foundation vents in their concrete front porches or in the slab patios outback.

- BCD can look at this. We can summarize available research papers. If enough information, we can work with the residential board on recommendations. If additional research and testing is needed, it’s up to the board and the director to determine if testing can/will be done (OSU, U of O or other materials lab).
- If enough information available to suggest digression from ORSC and model code, an interpretation or code change may be released to cover minimum vent areas (and extent of cross ventilation, if any)
- The amount of “natural draft” through 14+ foundation vents will at times be equal to zero. Whereas the fan continuously moves the code minimum; minor variations in flow due to outdoor temperature, wind speed and direction. Intent of mechanical vent system is to move same amount of air through crawl space (on average) as would move through unvented crawl space. Model code currently considers the two methods to be equal.
  - Caveat: Model code continues to have vented crawl space completely wrong for hot/humid climates. Southeast/gulf coast states (from MO/TN/VA southward) should never do a vented crawl space (to code minimum); southern homes guaranteed to rot. If evidence current crawl ventilation doesn’t work properly, fix it.

For the OMOA group and the question on existing chimneys (and attaching a replacement wood stove to an existing chimney):

Here is the section I was looking for: M1801.3. It allows connection to an existing chimney or vent if that vent is currently in good shape and has adequate draft.

#### M1801.3 Existing chimneys and vents.

Where an appliance is permanently disconnected from an existing chimney or vent, or where an appliance is connected to an existing chimney or vent during the process of a new installation, the chimney or vent shall comply with Sections M1801.3.1 through M1801.3.4.

##### M1801.3.1 Size.

The chimney or vent shall be resized as necessary to control flue gas condensation in the interior of the chimney or vent and to provide the appliance, or appliances served, with the required draft. For the venting of oil-fired appliances to masonry chimneys, the resizing shall be done in accordance with NFPA 31.

##### M1801.3.2 Flue passageways.

The flue gas passageway shall be free of obstructions and combustible deposits and shall be cleaned if previously used for venting a solid- or liquid-fuel-burning appliance or fireplace. The flue liner, chimney inner wall or vent inner wall shall be continuous and free of cracks, gaps, perforations, or other damage or deterioration that would allow the escape of combustion products, including gases, moisture and creosote.

##### M1801.3.3 Cleanout.

Masonry chimneys shall be provided with a cleanout opening complying with Section R1003.17.

##### M1801.3.4 Clearances

Chimneys and vents shall have airspace clearance to combustibles in accordance with this code and the chimney or vent manufacturer's installation instructions.

##### Exception:

Masonry chimneys equipped with a chimney lining system tested and listed for installation in chimneys in contact with combustibles in accordance with UL 1777, and installed in accordance with the manufacturer's instruction, shall not be required to have a clearance between combustible materials and exterior surfaces of the masonry chimney. Noncombustible firestopping shall be provided in accordance with this code.

Some MII's ask for UL 103 HT whenever connecting to a factory chimney (new or existing). This appears to be relevant to a desire for greater protection during a creosote fire.

There's an avenue for not requiring the HT (this section was found during the discussion with the fireplace installer).

I will check in more detail on Monday whether UL 737 listing requires the HT chimney (per M1414.1) or whether NFPA 211 has specifics about the HT chimney.

Thanks,

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