

# THE MECHANICAL INSPECTOR

## TECHNICAL TOPICS AUGUST 2008

Maintain  
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**MMIA**, Inc.

Better Enforcement  
Today  
for a Safer  
Tomorrow

Dear Membership,

The Mechanical Inspector Newsletter is going to devote two issues annually to TECHNICAL TOPICS. We hope you will find this informative. If you have a topic you would like more information on please contact us.

Please be reminded that the 2006 Michigan Residential Code, the 2006 Michigan Building Code, and the 2006 Michigan Rehabilitation Code all takes effect August 1, 2008. This completes the package of construction codes with the exception of a new Energy Conservation Code which is still in progress (first public hearing on August 12, 2008). Codes books are available at the Association office, call 248-649-5443.

### THE MECHANICAL INSPECTOR

is published quarterly at  
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#### Education Committee:

Sam Bouhanna, Eugene Burke, Jim Callender, Allan Grabowski, Bill Hiller, Carl Janson, Robert Logan, Mark Mangione, Bill Miller, William Paquette, Jerry Payne, Mark Riley, Kurt Ritchie, Keith Rosen, John Smith, John Wolter Co-Chairs, Guy Mitchell, William Moy  
*MIAM President Mike Shaltz*  
*MMIA President Vernon Pappas*

#### Ask the Committee:

Send your questions about Mechanical Code enforcement to the Education Committee for discussion and research. As space permits, they will be answered in this Newsletter. The address is:

#### Inform the Committee:

These articles are directed to membership participation. We welcome you to please submit your comments and answers.

#### REMINDER

Publishing deadlines are as follows:

Jan 1 deadline for Jan 15 mailing

Apr 1 deadline for Apr 15 mailing

Jul 1 deadline for Jul 15 mailing

Oct 1 deadline for Oct 15 mailing

Anyone is welcome to submit articles, but the Education committee will decide publishing priority.

### Bill Paquette —MCIRB

It's been quite a few months since the MCIRB, Mechanical Contractor Inspector Review Board, has been called to meet. I would like to remind both mechanical inspectors and contractors that MIAM has offered this mediation service for more than twenty years. We recognize that there are some "grey areas" in the Mechanical Codes and, sometimes it can help reach a mutual understanding, if inspectors and contractors can sit down together and discuss their different opinions.

The results of these discussions are "non-binding", but will be published in the inspectors and contractors newsletters in an effort to spread the word among all those whose concern it is to maintain the best and most safe standards in our industry.

Anyone who has a problem that they believe may be helped with such a meeting of the minds can contact the Association Office by E-mail or letter and request that an MCIRB meeting be convened. Together we can work toward accomplishing the ICC motto "safety in the built environment."

### Boiler Licensing for a Residence

Recent amendments to the boiler law have resulted in a long awaited change. The boiler law no longer regulates licensing of individuals who install or repair boilers in a private residence or apartment building with less than 6 families. By default, the licensing of individuals doing boiler installation or repairs in these locations falls to the State of Michigan Mechanical Division .

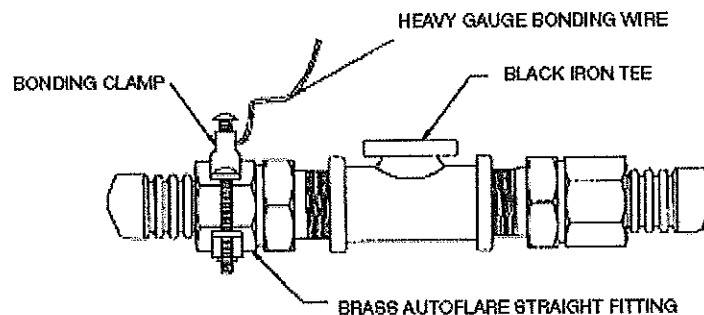
# TECHNICAL TOPICS

## Corrugated Stainless Steel Tubing—Mark Riley

"Electrical bonding of corrugated stainless steel gas lines (CSST)". Reading this article you are wondering why we are having something about electrical in a mechanical inspectors newsletter. The scope of this article is to inform you that the manufacture's instructions of bonding of CSST are more stringent than National Electric Code and International Fuel Gas Code. The codes allow the use of an appliance that is grounded to be used as the bonding of gas line.

Here are instructions from one manufacturer of CSST: *"The piping is permanently and directly connected to the electrical service equipment enclosure, the grounded conductor at the electrical service, the grounding electrode conductor (where of sufficient size) or to one or more of the grounding electrodes used. A single bond shall be made at or near the service entrance of the structure or the gas meter of each individual housing unit within a multi-family structure. The bonding conductor shall be 6 AWG copper wires. Bonding jumpers shall be attached in an approved manner in accordance with NEC-2005 Article 250.70 and the point of attachment for the bonding jumper shall be accessible. Bonding/grounding clamps listed to UL 467 comply with this requirement. This bond is in addition to any other bonding requirements as specified by local codes."* This requirement would take precedence over the code because it is stricter than the code mandates. (305.1 I.F.G.C.)

Proper grounding and bonding may reduce the risk of damage and fire from a lightning strike. Lightning is a highly destructive force. Even a nearby lightning strike that does not strike a structure directly can cause systems in the structure to become energized. If the systems are not properly bonded, the difference in potential between the systems may cause the charge to arc to another system. Arcing can cause damage to CSST. Bonding and grounding as set forth above should reduce the risk of arcing and related damage.



Check each manufacturer for more specific information. You will find the bonding requirements in section 4.10 of the installation instructions. Just a note of information there are some manufacturers who sell a second product line that has bonding is only to be bonded according to the code only. An example of this product would be Omega flex Trac pipe "Counter Strike", and there may be other products from similar companies too.

## MMC 2006– 106.2 Permits not required— Robert Massey

A person is not required to obtain a permit to perform mechanical work on any of the following items: A minor part that is replaced if the replacement does not affect equipment approval or make it unsafe.

This is a question that comes up too often in my area. I have had several discussions with contractors about the definition of a minor part and what has the potential to make a piece of equipment unsafe. Most contractors feel that anything short of complete replacement of the piece of equipment is maintenance and should not require permits and inspections.

**EXAMPLE A contractor who felt it was not necessary to pull a permit to change the compressor of a roof top unit.**

Are permits and inspections required for converting from natural gas to LP gas?

What about the replacement of faulty controls?

This code section appears to require permits and inspections for all such work. These items and others would require verification of proper listings of the replacement parts and proper installation. Some very small parts could cause the equipment to operate in an unsafe manner.

This issue will be part of the code study panel agenda at the fall conference so come prepared with your interpretation of this code section and join the discussion.

Bob M. Antrim County

# TECHNICAL TOPICS

Lynn Briggs—Legislative Consultant

Several bills involving "Housing Inspections" received attention from the Michigan Legislature prior to its adjourning for the Summer. These bills amend the Housing Law of Michigan (Public Act 167 of 1917 as amended) to regulate housing inspections on rental properties (not code enforcement inspectors).

**Senate Bill No. 635** (substitute S-2) passed the Senate on June 25, 2008 and was sent to the House of Representatives Committee on Intergovernmental, Urban and Regional Affairs (HRCoIURA) for their action. The bill would amend the Housing Law of Michigan to do the following:

- Allow a local unit to provide by ordinance for a maximum period of six years between inspections of multiple dwellings or rooming houses.
- Delete provisions requiring local inspections of multiple dwellings and rooming houses at least every two years or, as provided by ordinance, every three years if the most recent inspection found no violation.
- Allow a local unit and an enforcing agency to accept inspections conducted by the U.S. Dept of Housing and Urban Development, or other government agencies, as a substitute for inspections required by a local enforcing agency.
- Allow inspections to be conducted on a compliance basis or a percentage basis, as well as an area basis, a complaint basis, or a recurring violation basis, as currently required.
- Specify that an owner or property manager would not be liable for an inspection fee if the inspection were not performed and the enforcing agency were the direct cause of the failure to perform.
- Require an enforcing agency or a local unit to produce a report to a requesting party on the income and expenses of the inspection program for the preceding fiscal year; and allow the agency to charge the requesting party a fee up to the actual reasonable cost of providing the information, if the agency did not have readily available access to it.

**House Bill No. 5206** passed on April 16, 2008, sent to the Senate Committee on Economic Development and Regulatory Reform. The bill would amend the Housing Law of Michigan to lengthen the period of time between housing inspections of multiple dwelling rental units. Currently under the law, a local housing enforcement agency must inspect multiple dwellings and rooming houses on a periodic basis. The period between inspections cannot be longer than two years. (All other dwellings can be inspected at "reasonable intervals.") HB 5206 would specify the period between inspections cannot be longer than four years (rather than two). The law also allows a local governmental unit to provide, by ordinance, for a maximum period between inspections of a multiple dwelling or rooming house that is not longer than three years, if the most recent inspection of the premises found no violations of the act. HB 5206 would allow for a maximum period between inspections of six years (instead of three), if there were no violations of the act discovered in the most recent inspection.

**House Bill No. 6088** (Substitute H-2). The bill would prohibit a person from providing home inspection services of residential property without a license; establish application, examination, and licensing fees for a home inspector license; create the Occupational Fund to fund the operation of the Bureau of Commercial Services; establish civil and criminal penalties for violations; and establish application, license, and examination fees. The bill would apply to inspections of residences that are primarily for family living quarters and designed for occupancy of not more than four families in separate dwelling units. "Residence" as defined in the bill would not include newly constructed buildings or buildings that had not been previously occupied as a dwelling unit. A "home inspector" would mean a person engaged in, or offering to engage in, the business of providing home inspection services. It would exclude persons doing inspections for compliance with local, state, or federal health and safety laws and regulations and construction or building laws, codes, or regulations. Licensing requirements would also not apply to persons licensed, registered, or certified under the building, mechanical, and trade codes when doing inspections within the scope of their regulated professions

**House Bill No. 4958** was introduced on June 20, 2007 and also would amend the Housing Law of Michigan. This bill has sat in the House Committee on Intergovernmental, Urban and Regional Affairs for over a year and has not received any attention by the committee.

# TECHNICAL TOPICS

JOE OTIS NFPA LAISON



## NEW FOCUS ON CPVC BEST PRACTICES

The use of nonmetallic pipe in fire sprinkler systems is fairly modern, but there have been several distinct eras involving different types of products. As manufacturers of some types of nonmetallic piping seek broader acceptance, others are working to ensure the use of best practices for installation and use.

The first nonmetallic material listed for use in fire sprinkler system pipes was polybutylene, a flexible piping products joined by a heat fusion technique that came onto the scene in 1983. It showed great promise, but within a decade, failures in plumbing systems led to a class action lawsuits and the end of polybutylene fire sprinkler piping.

The most recent nonmetallic sprinkler piping product, cross linked polyethylene (PEX), was first accepted in 1999, but only for use in combined sprinkler and plumbing systems for dwellings to which NFPA 13D, *Installation of Sprinkler Systems in One- and Two- Family Dwellings and Manufactured Homes*, applied. Because the PEX doesn't have the same pressure capability at elevated temperatures as previously listed nonmetallic sprinkler piping, the Technical Committee on Residential Sprinkler Systems decided that a reduced pressure rating would be allowed if limitations and the use of the domestic water system precluded exposure to high sprinkler system pressures. As the 2010 edition of NFPA 13D is being prepared, one of the issues facing the technical committee is whether the connection of a single domestic fixture to the sprinkler system, a concept the committee has named a "passive purge" system, affords the same protection.

Chlorinated polyvinyl chloride (CPVC) sprinkler pipe followed the original polybutylene listing by about two years, and has been successful since it was introduced. Manufacturers report that more than a billion feet of CPVC sprinkler piping have been installed in applications complying with NFPA. 13D and NFPA 13R, *Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height* applications and in light hazard NFPA 13, *Installation of Sprinkler Systems*, applications. Even with a product this established, CPVC pipe and fittings manufacturers seek to prevent problems by cooperating to standardize installation instructions, warning labels, and other aspects of use.

The biggest concern is product compatibility. Lubrizol Corp., formerly Noveon, Inc., has had a chemical compatibility approval program in place for its BlazeMaster CPVC piping for several years. The program mainly addresses ancillary items such as thread sealants and antifreeze solutions, but it also includes insulation materials, seismic separation assemblies, and flexible drops, more than 50 products in all. BlazeMaster's website, [www.blazemaster.com](http://www.blazemaster.com), also lists nearly 50 unacceptable products.

The main concern is the potential for environmental stress cracking over time. These compatibility issues must be recognized by general contractors, other trades at the work site, authorities having jurisdiction, property owners and maintenance people, and fire sprinkler contractors.

All nonmetallic piping products have come into the NFPA sprinkler standards as special listed products. Successful special listed products such as CPVC have gradually been addressed more generically over the years. Although most new compatibility issues relate to the use and handling of materials at the job site, engineers and technicians should follow best practices when specifying CPVC and other nonmetallic piping products and when acknowledging the use of such products in combination with building interfaces.

NFPA Journal May/June 2008

# TECHNICAL TOPICS

## VERNON PAPPAS

Two important appeals decisions were recently completed and are linked at our website, [www.mechanicalinspector.com](http://www.mechanicalinspector.com). You can review both the Local and State appeals at that site for a complete set of findings.

**The question is does every restaurant require hoods according to 2003, MMC 507 whether the cooking is done in a dedicated kitchen or at the tables? YES**

### **A brief synopsis of the case in point:**

We have a nationwide chain of fondue style restaurants that have never been required to have hoods or exhaust systems over the tables in the restaurant. No cooking is done in the kitchen. All cooking in these style restaurants is at the tables. Each table has an electric cook top in the center which heats either a 44 ounce pot of canola oil or a broth mixture to cook the entree in. While cooking the product the effluent is floating without a means of exhaust. The oil temperature is approximately 350 to 400 degrees, the same temperature you would normally use for a deep fryer in a normal kitchen. The broth mixture, when chosen, is set to a temperature which boils in order to cook the product.

The chains position is that they meet the requirement in 2004, NFPA 96, section 4.1.1.2 for reduced emissions so therefore no need for a hood/exhaust system. The chain provided documentation to support this position. They provided no documentation to relieve the need for exhausting the heat and steam generated from the boiling broth. It was their opinion that exhaust was not required for this part since the IMC treats this as a HVAC function for removal if they compensate for the moisture with increased capacity of the cooling units for dehumidification purposes.

### **The problem is:**

The chain did not request use of the 2004 code or standards since the project is under the 2003 Codes, &

1. 2004, NFPA 96, 4.1.1.2 is a subsection in a section devoted to recirculating hoods with the subsection applying to the exhaust effluent off the recirculating hood, not the appliance itself.
2. 2004, NFPA 96 is used for grease vapor and excludes its use in a Type 2 condition, 2004 NFPA 96, A.3.3.32.
3. 2004, NFPA 96, A.3.3.23.2 prohibits the use of filter screens that they intended to use on the return grills as a extra precaution.
4. 2003, MMC 507 does not give an exception to this style of appliance or cooking to be without the requirement of a hood/exhaust system.
5. The use of the ERV in this system is prohibited in the 2003, MMC 514 for a type 1 or 2 exhaust system.

### **The decision of 2 appeals boards: HOOD IT**

They now can choose to appeal to the State Construction Code Commission, then the Circuit Court, or as I suggested early on, get UL approval and State Product approval for this style of cooking. The latest conversations I have had with this chain is that they will first file a letter that no cooking with oil will be done with a provision if they are caught using oil they will immediately lose the C of O and be shut down. Second they will redo the duct system for the HVAC and install an equivalent/approvable Type 2 system and then go to the State for the Product Approval to negate the letter on oil cooking.

# TECHNICAL TOPICS

## INTERNATIONAL CODE COUNCIL 2008 FINAL ACTION CODE HEARINGS

September 17-23, 2008 Minneapolis Convention Center, Minneapolis, MN

The final code hearings for 2009 Codes will take place on September 23, for Mechanical codes and International Fuel Gas Codes. Here are some the major contentions that are going to be discussed at the hearings.

### International Fuel Gas Code

1. Definition of "noncombustible" to be same as in mechanical code.
2. Requiring water heaters to comply with "room large compare to appliance" definition
3. Allow gas lines to go through townhouse units not served by that townhouse.
4. Not allowing unvented heaters in manufactured homes and homes that meet the air leakage requirements as required by the energy code.

### International Mechanical Code

1. Provide code language to clear up confusion between exhaust outlets and air intakes.
2. Rewrite the code concerning elbow equivalent lengths for dryer venting.
3. Provide code language for commercial power exhaust systems for dryers.
4. Not allowing water to be used in plastic pipes for testing combustibility to ASTM E-84 for plenums.
5. Provide duct insulation values in the code book without having to refer to the energy code.
6. Code requiring lockable access caps on refrigeration service valves to prevent minors from sniffing refrigerant.

### **William Hiller – Can an outdoor wood furnace be used as the only heat source? NO**

Section 301.16 of the MMC states; "that each dwelling unit shall be provided with heating facilities capable of maintaining a minimum room temperature of 68 degrees, three feet above the floor and two feet from exterior walls". The argument, "if wood is put in it at all times, this will meet the requirement. However, Section 304.1 MMC 2006, states, "equipment and appliances shall be installed as required by the terms of their approval, in accordance with the conditions of the listing, the manufacturers installation instructions and this code." All the installation instructions I have seen for outdoor wood furnaces states, **Caution this wood furnace is not intended to be the only source of heat.** The bottom line is "it is always important to read the installation instructions before you give your approval."

### **Bill Miller—Can B-Vent be used to vent a gas fired unlisted appliance? NO**

**Discussion: The MMC, MRC and IFGC all require that appliances be listed and labeled unless approved using the "Alternate materials, methods and equipment" section of the code. As there appears to be no manufacturers' information for the equipment, its approval would require documentation or testing for approval.**

**Let's examine the venting method; Table 503.4 of the IFGC specifies the type of venting required for gas equipment. The table shows that unlisted equipment be vented using a chimney per Section 503.5, section 503.5.1 states that "Factory Built Chimneys" be installed per the manufacturers' installation instructions.**

**Below is an excerpt from one manufacturer's installation instructions;**

"Type B Gas Vents are for venting listed Natural Gas or Liquid Propane Category I appliances only. The appliances listed below typically (but not always) use Type B vent systems.

Boilers, Furnaces, Water Heaters, Unit Heaters, Room Heaters, Duct Furnaces, Floor Furnaces, Decorative Gas Appliances

Simpson Dura-Vent Type B Vent Systems may be used on other gas-burning appliances, provided the manufacturer of the appliance states in their installation instructions that Type B-vent is acceptable.

Do not use Type B Vents for Category II, III, or IV gas appliances.

Type B Vent shall not be used to vent flue products from incinerators, combination gas/oil appliances, oil-fired, or wood-burning appliances."

**Based on the code and the above manufactures instructions an unlisted appliance may not be used with B-Vent.**

# EDUCATION AND EMPLOYMENT UPDATES

## MECHANICAL INSPECTOR REGISTRATION REQUIREMENTS

September 17, 2006 Thru September 16, 2009 PROVIDED BY END OF CYCLE

REQUIRED CREDIT HOURS	MIAM (03-29-09)	MMIA (06-18-09)
Administration	4	6 NOT ACC
Technical	24	19
Communication	1	2
Specialty	18	27
Plan Review	12	6
Total	59	60

### METROPOLITAN MECHANICAL INSPECTORS ASSOCIATION SEMINAR SCHEDULE THROUGH THE END OF THE 2006—2009 CYCLE

Sep 18 08 **Commerical Kitchen Plan Review**  
3 Cr PR Mark Riley

Oct 16 08 **Mech PR Comm. & Industrial Appl.**  
4 Cr PR Bill Moy

Dec 11 08 **ICC Bldg Off Guide/Write Violations**  
2 Cr C,A Mark Riley

Jan 15 09 **Code Update**  
4 Cr TECH T. Barry

Mar 19 09 **Gas Pipe Manufacture Std Practices**  
3 Cr SP Randy Pagel

May 21 09 **ICC IFGC Fund \*ALL DAY CLASS\***  
6 Cr TECH TBD

Jun 18 09 **Wet Geothermal**  
3 Cr SP V. Pappas

### MECHANICAL INSPECTORS ASSOCIATION MICHIGAN SEMINAR SCHEDULE THROUGH THE END OF THE 2006—2009 CYCLE SEPT 25-27, 2008

CRYSTAL MOUNTAIN, THOMPSONVILLE, MI

2 CR TECH RESIDENTIAL INSPECTIONS

2 CR PR COMMERCIAL PR WHITE BOX

2 CR TECH REFRIG 410R, WELDING & BRAZING

6 CR TECH NFPA 13&25, STD FOR INSPECTION, TESTING & MNT OF WATER BASED FIRE PROTECTION

2 CR TECH CODE STUDY TECHNICAL

2 CR PR CODE STUDY PLAN REVIEW

MAR 27-29, 2009

DOHERTY HOTEL, CLARE MI

2 CR PR PLAN REVIEW

2 CR SPEC VARIABLE SPEED COMMERCIAL KITCHEN EXHAUST

6 CR TECH ICC IMC PLG, MECH, FUEL GAS

### CIT Certified Inspectors Training

#### **Schedule Hotel Doherty, Clare**

January 5-8, 2009: Plumbing (5th), Mechanical (6th), Building (7th), Electrical (8th)

June 1-4, 2009: Plumbing (1st), Mechanical (2nd), Building (3rd), Electrical (4th)

Questions: Curtis Stowe 248-624-0570 (office), 586-436-0450 (cell phone) [Email: ces95@fastmail.fm](mailto:ces95@fastmail.fm)

### West MI Mechanical Inspector Association

Meets at the Zeeland Township Hall, 6582 Byron Rd, every 2nd Thursday each month at 12:45 pm. The Association has a business meeting, followed by a seminar.

WMMIA Contacts: Paul Schaut:  
[pschaut@ci.grand-rapids.mi.us](mailto:pschaut@ci.grand-rapids.mi.us)

**NEED A SUB?** Are you going on vacation? Planning to take time off your job? Too much work and not enough staff? Check this listing for a substitute inspector to give you a hand when you're not in the office or over worked. The following people may be available to sub for you: Ed Barnes 248-224-3357, Gary Barger 248-601-1757, Eugene Burke 810-964-8964, Ed Durbin 586-739-1600, Bill Karas 810-650-8183, Bill Myers 248-348-5830, and Vern Pappas 248-343-8830 If you would like to be added to this list, please call the Association offices at 248-649-5443.

## FULL TIME BUILDING INSPECTION DEPARTMENT IS ACCEPTING RESUMES FOR THE FOLLOWING:

**FULL AND PT INSPECTORS in the fields of building, electrical, plumbing, & mechanical** (benefits offered for full time positions). \*PA 54 registration preferred\*. Dept. operations provide inspections in the SW area of MI.

**FULL AND PT CLERICAL STAFF.** Computer experience preferred, building/trades experience beneficial.

**PLUMBING/MECHANICAL INSPECTOR** (benefits offered for full time positions). \*PA 54 registration preferred\*. Dept. operations provide inspections in the SW area of MI.

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Mechanical Inspectors Association of Michigan (MIAM) Board of Directors term runs from March 28, 2008 to March 26, 2009.  
Metropolitan Mechanical Inspectors Association (MMIA) Board of Directors term runs from January, 1 2008 to December 31, 2008.

**INSPECTORS EDUCATION FUND**  
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