SUMMER 2010

ASPE NEWS

American Society of Plumbing Engineers

Eastern Michigan Chapter

http://aspe.org/Eastern_Michigan

Serving our membership since 1975 *Vol. 13, Issue 10*

For Your Information

Bits & Pieces

NEW 2009 Michigan Plumbing Code Goes into Effect August 20, 2010

The Code Study and Development Group of Southeastern Michigan is hosting two 2009 Michigan Plumbing Code update seminars. A full five (5) hour presentation and explanation of the Codes, both the Michigan Plumbing Code (commercial, industrial and institutional) and the Michigan Residential Plumbing Code. Completion of this course will give the attendee the State of Michigan requirements necessary to renew their Journey Plumber and Master Plumber licenses as a code update class. Registered Inspectors will also receive one (1) hour of Administration, three (3) hours of Technical, and one (1) hour Specialty credits. Further info on page 3. See registration form/ flyer enclosed with this month's newsletter. You may also download a form from the ASPE EMC website.

USGBC Founder Starts New Green Organization

The U.S. Regenerative Network, led by green building pioneer David Gottfried, held its inaugural forum in Berkeley, CA on April 28-29, with senior representatives from 19 founding member companies (including Sloan Valve), industry experts, and 60 real estate design, construction and ownership affiliates. Gottfried-founder of the U.S. Green Building Council (owner of the LEED® green building rating system) and World Green Building Council-created the U.S. Regenerative Network as a consortium of leading green building product manufacturers and service providers. For more information, visit: www.regen-net.com.

inside...

PRESIDENT'S REPORT

John R. Nussbaum, IPP, FASSE

What's taken place and what's coming?

The Michigan Backflow Prevention Association of the ABPA held their Educational Conference at the Plumbing Industry Training Center on June 8, 2010. The conference attendance was over 80 members and was a huge success. Some of the highlights include two mock court trials…a trial of a tester followed by a trial of an inspector. Marianne C. Waickman, Professional Qualifications Coordinator for ASSE, gave an overview of the ASSE Cross-Connection Control Professional Qualifications Standard. Matt Kapcia covered how to fill out test forms properly and Ace Sprinkler did "Fire Suppression and Backflow". Again, the local manufacturers' representatives have supported the event by having tabletop displays.

Paul Bladdick, David Rhodes and I attended the Region II Presidents meeting in Pittsburgh, PA on the weekend of June 4. Some of what took place—We scrutinized and voiced our concerns over the proposed Bylaw changes to be presented at the convention this autumn. Due to the CPD Practice Exam, the number of people passing the exam has increased by ten percent or better. The CPD Manual is still being updated. David Rhodes is providing a full report of the presidents meeting. The *Plumbineering Dictionary* will be offered through our chapter as soon as they become available. Twenty people, representing 12 chapters, were in attendance. Once again, the Chapter received the 2010 Region II Director's Award for outstanding performance by an ASPE Chapter in its support and growth of the Society and furthering of the education of its members and the engineering community through its development, implementation and continued presentation of the ASPE Handbook and Vendor Classes.

Coming Events

The Code Study and Development Group of Southeastern Michigan has scheduled two dates to conduct Code Update classes on the 2009 Michigan Plumbing Code featuring Bob Konyndyk Chief of the Plumbing Division State of Michigan. You will find the registration flyer and code books order form enclosed with your newsletter.

I met with Education Committee members, Joe Hernandez, David Rhodes, Dann Holmes, John Snyder, Ed Hawley and guest Dominic Bologna of Aquatherm, on May 22nd at the MCA Detroit offices to generate programs for the 2010/2011 monthly meetings. Once again, we have come up with a

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FYI

The 2009 Michigan Mechanical Code will go into effect on October 20, 2010. The Code books are currently being printed and will be available for purchase shortly.

FYI

The 2010-2011 ASPE Eastern Michigan Chapter Program is available for viewing on our web site. The program brochure will be printed soon and mailed to our members.

ATTENTION MEMBERS

We have TWO GREAT PROGRAMS lined up for September and October.

September 21, 2010

Mike Gaber, the Chief of the Well Construction Unit of the Michigan Department of Environmental Quality will be with us to discuss "***Michigan Regulations for Geothermal Closed Loop Systems***".

October 19, 2010

Michael Dolkowski, founder and CEO of Carbon Credit Environment Services, will present "***How to increase your market share by going GREEN***". This class is targeted to Plumbing and Mechanical Engineers, Installers and Contractors within all business sectors.

Need Code Books?

Code books may be ordered with pre-payment at the prices indicated below for ASPE EMC, ASSE Michigan Chapter and MBPA members:

ICC 2009 Plumbing Commentary	$ 68
ICC 2009 Mechanical Commentary	$ 68
ICC 2009 Fuel Gas Code	$ 52
ICC 2009 Fuel Gas Commentary	$ 62
2005 NFPA 99C	$ TBA
Michigan 2009 Plumbing	$ 60
Michigan 2009 Mechanical	$ 60
Michigan 2009 Building	$ 99
Michigan 2009 Residential	$ 81
Michigan 2009 Barrier Free Manual	$ TBA

Contact Cassie at (313) 341-7661 ext. 205 or cmudloff@mcadetroit.org to get an order form.

Books may be picked up at MCA Detroit. Shipping is extra.

Only cash or company check accepted. *No credit cards.*

Checks should be made payable to: Code Study & Development Group of SE Michigan

CODE STUDY AND DEVELOPMENT GROUP OF SOUTHEASTERN MICHIGAN

14801 West 8 Mile Road
Detroit, MI 48235

REGISTER NOW

2009 Michigan Plumbing Codes

Accredited 5 Hour Code Update Seminar

with Bob Konyndyk, MI Chief Plumbing Inspector

2009 MI Plumbing Code effective 8-20-10

Monday, August 16, 2010

Registration:	1:00 pm
Seminar:	2:00 - 8:00 pm
Dinner:	6:00 - 6:30 pm
Where:	Shriners Auditorium 24350 Southfield Road Southfield, MI 48075
Cost:	$125 per person *includes 2009 MI Plumbing Code Book, Seminar & Dinner*
or	$65 per person *includes Seminar & Dinner Only*

All registrations must be prepaid.

Find the flyer/registration form included with this newsletter. It can also be downloaded from the ASPE EMC web site at www.aspe.org/Eastern_Michigan

President's Report

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varied assortment of plumbing and mechanical technical meetings to keep you on the cutting edge of the latest technology available to you.

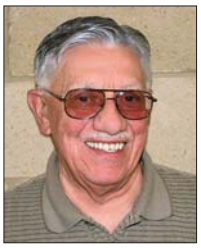
Joe Hernandez will continue to conduct his Handbook classes. Joe's upcoming classes will run on a little different schedule from 3:45 till 5:30 PM. The subject matter will be covering medical facilities from start to finish. The Manufacturers Representatives will also have from 3:45 till 5:30 PM to introduce new products' design and application.

I hope you all will have a great summer and return in the autumn ready to absorb all we will offer to keep you successful in your endeavors.

Your president,
John Nussbaum

Ed's Perspective

By Ed Hawley, CPD



May 18, 2010 ASPE Design Class

Designing and Implementing Chemical Waste Tank & Piping Systems

Presenter, Christopher G. Ziu, began with a PowerPoint outline of the presentation, partitioned into 8 sections.

Overview of Neutralization Methods:

What is neutralization? The definition of acid neutralization is when the H+ in an acid is converted to water by combining it with a base. The general equation for this reaction is HA + BOH → H_2O + BA, where A is the anion from the acid and B is the cation from the base. An example would be the neutralization of hydrochloric acid with sodium hydroxide:

$$HCI + NaOH \rightarrow H_2O + NaCI$$

Neutralization, a chemical reaction, according to the Arrhenius Theory of acids and bases, in which a water solution of acid is mixed with a water solution of base to form a salt and water. This reaction is complete only if the resulting solution has neither acidic nor basic properties. Such a solution is called a neutral solution. Complete neutralization can take place when a strong acid, such as hydrochloric acid, HCI, is mixed with a strong base, such as sodium hydroxide, NaOH. Strong acids and strong bases completely break up, or dissociate, into their constituent ions when they dissolve in water. In the case of hydrochloric acid, hydrogen ions, H+, and chloride ions, CI-, are formed. In the case of sodium hydroxide, sodium ions, Na-, and hydroxide ions, OH-, are formed. The hydrogen and hydrochloric ions readily unite to form water. If the number of hydrogen ions in the hydrochloric acid solution is equal to the number of hydrochloric ions in the sodium hydroxide solution, complete neutralization occurs when the two solutions are mixed. The resulting solution contains sodium ions and chloride ions that unite when the water evaporates to form sodium chloride, common table salt. In a neutralization reaction in which either a weak acid or a weak base are used, only partial neutralization occurs. In a neutralization reaction in which both a weak acid and a weak base are used, complete neutralization can occur if the base is equally weak. The heat produced in the reaction between an acid and a base is called the heat of neutralization. When any strong acid is mixed with any strong base, the heat of neutralization is always about 13,700 calories for each equivalent weight of acid and base neutralized.

What is important that needs to be mentioned is the dwell time the solutions must have for its reaction time, neutralizing inside a tank of a designed system prior to being able to discharge into the sanitary system and it should never be discharged into the storm system. Later into the program, data will be introduced for the methods of sizing a system.

References:

ASPE, Vol. No.3, Chapter No.3, Treatment of Industrial Waste

National Technical Information Service: www.ntis.gov

U.S. Government Printing Office: www.gpoaccess.gov

Underwriters Laboratories: www.ul.com

http://en.wikipedia.org/wiki/Neutralization_(chemistry)

http://en.wikipedia.org/wiki/PH

pH calculator: http://www.webqc.org/phsolver.php

What is pH?...pH Adjustment – A Primer

A brief review of the definition of pH scale and some of the chemistry involved in pH adjustment systems is provided below. For some this may be trivial, yet for many others this may be useful. By definition pH is the measure of free hydrogen activity in water and can be expressed as: pH+ -log[H+]

In more practical terms (although not technically correct in all cases) pH is the measure of acidity or alkalinity of water. Measured on a scale of 0–14, solutions with a pH of less than 7.0 are acids while solutions with a pH of greater than 7.0 are bases. In very simple terms, bases are used to neutralize acids, while acids are used to neutralize caustics (the terms caustics and base, although not truly synonymous, are often used interchangeably). The byproducts – normally salts (which may or may not be soluble) and water.

Industry methods for treating waste from research labs

Water Dilution – low level of human procedure to flush acid waste.

Lime Neutralization – tank or basin filled with Lime rocks or chips. (Depends on a lot of dwell time).

Batch System – acid and base system usually used in research facilities.

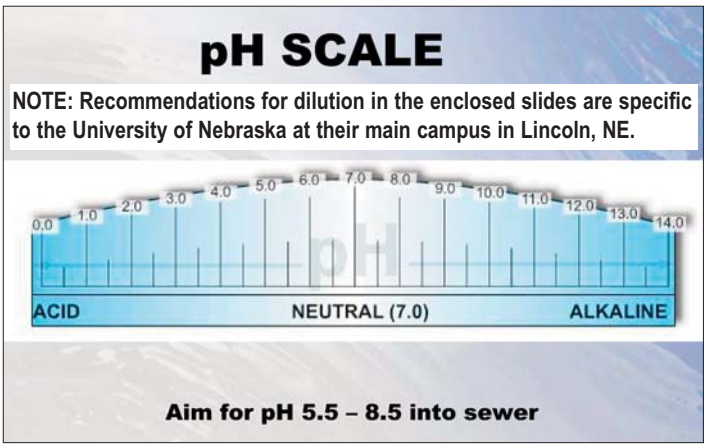
Steam or Chemical Kill Tanks – pharmaceutical use

Chemical Waste

Collected & treated (before discharging into sewer)

1. Dilution 2. Limestone Chips 3. Chemical Dosing

Monitor pH (before discharging into sewer)



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ASPE EMC May Meeting

A big THANK YOU to Cindy Zatto for providing photos.

Ed's Perspective

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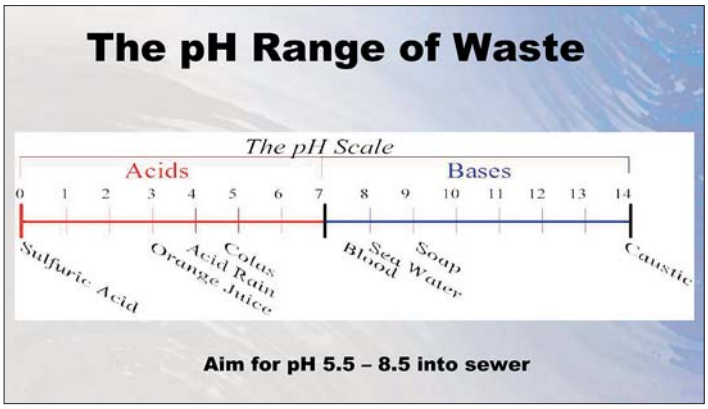

NOTE: These recommendations will likely vary from what is recommended or allowed at University of Michigan, Michigan State, Wayne State, various high school jurisdictions throughout Michigan, NSF headquarters, etc. They are also far from universal industry standards (there is no such thing) and they are definitely not the recommendations of Orion Fittings, nor are they the recommendations of Christopher Ziu.

The following videos are reviews of the pH scale that is used in the monitoring of all ranges of waste. In the treatment plant, bacteria is used to break down the waste. Try to aim for pH 5.5 – 8.5 into sewers. In my quest for more back up data, I found these interesting examples, enjoy!

http://www.youtube.com/watch?v=DWa1af7lXes&NR=1

http://www.youtube.com/watch?v=RF40cI2O16U&feature=reladte

http://www.youtube.com/watch?v=Dua875XdX94&feature=related

Solvents cannot be neutralized. They must be collected for disposal as hazardous waste or diluted properly prior to disposal to the sewer, never mix it in the drain system. Always collect it separately.

Dilution – The physical mixing of chemicals with water in various tanks specially designed.

Starting with one gallon and up, in tanks; Low Flow, usually under a bench, with a predictable flow of ph, using non-aggressive chemicals.

Neutralization Water Dilution – Dilution is based on volume and is accomplished with water.

Solutions containing chemicals not included in provided list, regardless of concentration, may not be disposed to the sanitary sewer.

A recommended maximum of 1 liter (before dilution or neutralization) of any specific chemical may be flushed down an individual drain each day.

The entire amount of the solution following treatment may be disposed at one time, even if the resulting volume is greater than one liter.

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2009 Michigan Plumbing Codes
Accredited 5 Hour Code Update Seminar

Date: Monday, August 16, 2010
Registration: 1:00 PM
Seminar: 2:00 - 8:00 PM
Dinner from 6:00 - 6:30 PM
Where: Shriners Auditorium
24350 Southfield Road
Southfield, MI 48075
(Nine 1/2 Mile & Southfield Rd, east side)
Cost: $125 per person
includes 2009 MI Code Book, Seminar & Dinner
or $65 per person
includes Seminar & Dinner ONLY

PLEASE NOTE: You should have your own copy of the **NEW 2009 Michigan Plumbing Code (effective Aug. 20, 2010)** for this seminar. All prepaid pre-ordered 2009 MI Plumbing Code books, included in the full seminar price of $125 per person, will be available for pick up on the day of your seminar at the seminar location when you sign in. We ***will not*** be selling code books at the seminar.

Bob Konyndyk, Chief
Plumbing Division
Bureau of Construction Codes

Program: A full five (5) hour presentation and explanation of the Codes, both the Michigan Plumbing Code (commercial, industrial and institutional) and the Michigan Residential Plumbing Code. Completion of this course will give the attendee the State of Michigan requirements necessary to renew their Journey Plumber and Master Plumber licenses as a code update class. Registered Inspectors will also receive one (1) hour of Administration, three (3) hours of Technical, and one (1) hour Specialty credits. Program sponsored by the Code Study and Development Group of Southeastern Michigan. **2009 MI PLUMBING CODE GOES INTO EFFECT 8-20-10**

Instructor: Robert G. Konyndyk is Chief of the Plumbing Division within the Bureau of Construction Codes, Department of Labor and Economic Growth, State of Michigan. Mr. Konyndyk plans, organizes, directs, and controls a statewide license program that encompasses over 15,000 professionals. In addition Mr. Konyndyk manages state field inspectors, and oversees plumbing code development and administration, and product acceptance.

PREPAID RESERVATIONS REQUIRED

Code inquiries: Contact John Nussbaum at (313) 341-7661 ext. 211 or jnussbaum@mcadetroit.org.
Questions, registration changes and code book orders: Contact Cassandra Mudloff at (313) 341-7661 ext. 205, e-mail to cmudloff@mcadetroit.org or fax to (313) 341-1007.
Make all checks payable to: Code Study & Development Group of SE Michigan
Mail to: Plumbing Code Update Seminar, 14801 W 8 Mile Road, Detroit, MI 48235

	Ordering Codebook		Amount Enclosed
Name	☐ YES	☐ NO	$
Name	☐ YES	☐ NO	$

Company or Affiliation — Contact Person or Supervisor
Address — City / State / Zip Code
Telephone Number — E-mail Address *if available*

Seminar administration, publications and printing contributed by the Mechanical Contractors Association of Detroit (www.mcadetroit.org).

Ed's Perspective

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Water must be run down the drain for a minimum of 5 minutes after each disposal.

The volume of chemical and water dilution volume is between 10:1 and 20:1.

Disposal may only be made to a sanitary sewer, and not to a septic system or storm sewer.

Only aqueous solutions solely containing the chemicals listed here may be disposed to a sanitary sewer.

Solutions containing chemicals not included on this list, regardless of concentration, may not be disposed to the sanitary sewer.

A maximum of one liter (before dilution or neutralization) of any specific chemical may be placed down an individual drain each day.

Further instructions regarding and/or neutralization that must be followed prior to disposal are described below for some chemicals.

* For neutralization, follow any acceptable lab procedures neutralizing the chemical.
* Dilution is based on volume and must be made with water.
* The entire amount of the solution following treatment may be disposed at one time, even if the resulting total volume is greater than one liter.
* The pH of all chemicals must be in the range of 5.5 to 8.5 before disposal.
* Water must be run down the drain for a minimum of 5 minutes after each disposal incident.

The chemical dilution and neutralization LIST is available at: UNI Environmental Health and Safety by calling (402) 472-4926 or visiting http://ehs.uni.edu

Limestone Neutralization

Acids neutralization via chemical reaction with limestone
Calcium carbonate > 90% purity (weak base)
"Dwell Time" of 2 ½ - 3 hours.

Chemical Reaction example with Hydrochloric Acid

$CaCO_2 + HCI = CaCI_2 + CO_2$

The CO_2 is gased through the venting system.

A laboratory schedule can be provided by a tank manufacturer.

The rest of the PowerPoint presentation centered around the number of various tank and systems used in the industry sizes/types, that are available with complete control systems, very well illustrated. The primary materials used for the chemical waste in the lab and below ground, single and double walled are:

* Polypropylene (PP) introduced in 1967, ASTM F 1412
* Polyethylene (HDPE), In 1992, PVDF, ASTM F 1673
* Borosilicate Glass, ASTM C1053
* Duriron (High Silicon Alloy Iron) ASTM AS518; A861 (One of my favorite piping for all underground work.)

Careful material selections are necessary to survive various accidental dumping without the flushing potentials or careless individual actions.

When we have a particular problem, it's best to have a valued vendor like ORION Enterprises, Inc. and the Taggart-Knight Group as your vendor contact. Thanks Gary O. Taggart, for introducing our guest speaker, Christopher G. Ziu, and for a very educational and highly valued program. Well done, gentlemen!

Edwin Louis Hawley, CPD

For more reference charts from Christopher Ziu's presentation go to the following URL:

http://eastern-michigan.aspe.org/PDF/Ziu_Slides.pdf

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DIVERSIFIED SPEC. SALES, INC./
HOWLEY AGENCY SALES CO.
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Michael J. Burdette
Ph 248 398-2400 Fax 248 547-4905
www.diversifiedspec.com

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ASPE NEWS

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First Class Mail

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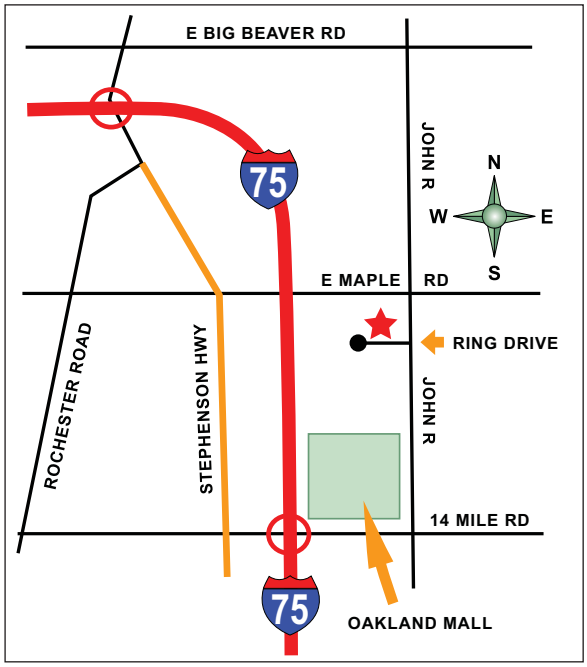
Map to the Plumbing Industry Training Center
1911 Ring Drive - Troy, MI
West of and off John R, north of 14 Mile Rd.



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