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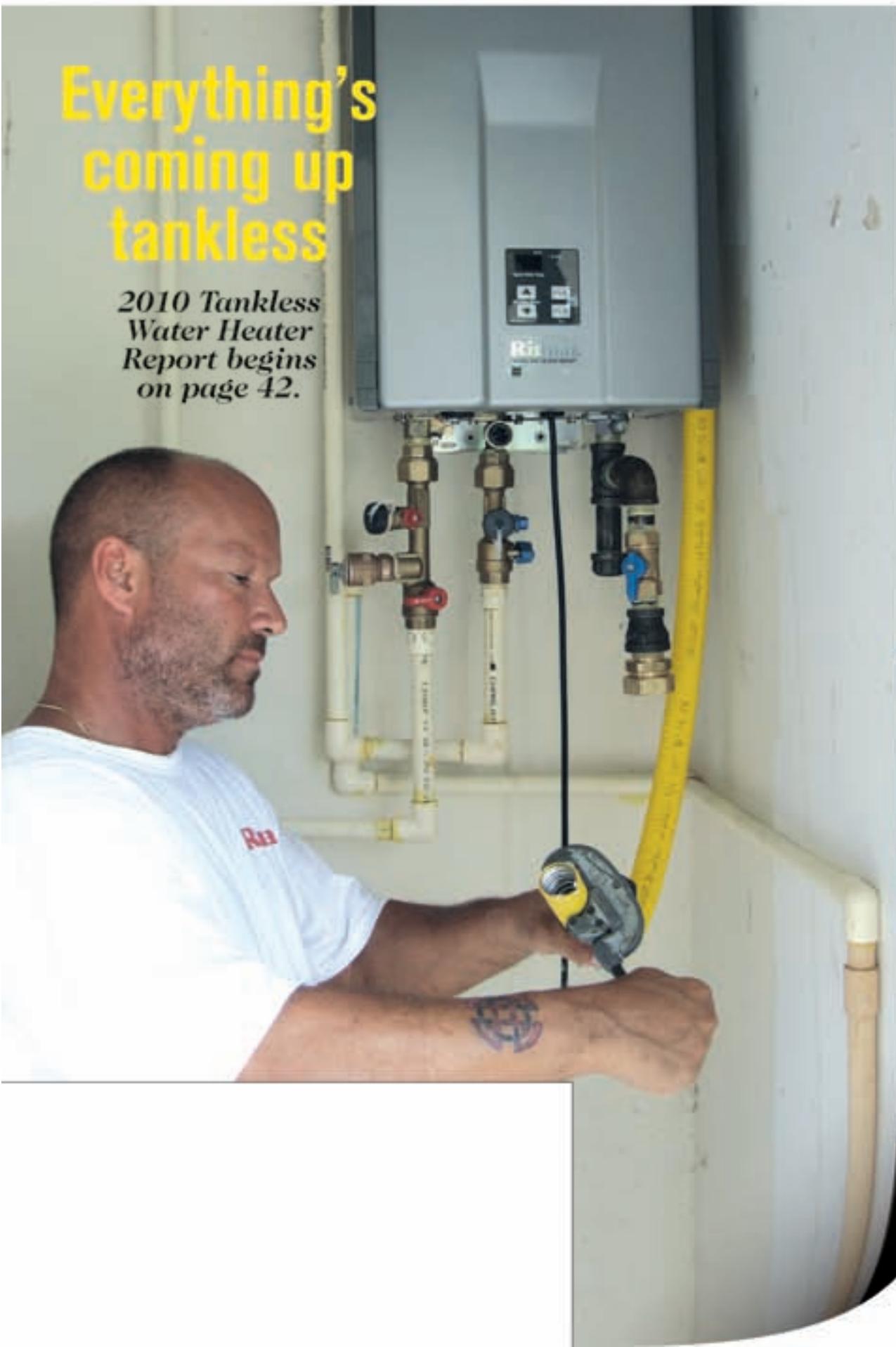
A TMB Publication

Phc News

plumbing & hydronic contractor news

Everything's coming up tankless

2010 Tankless Water Heater Report begins on page 42.



Back By Popular Demand!
ECR's Sail Away
Escape Giveaway
(Inside Back Cover)



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Must meet ARRA and Buy America Requirements.

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Circle 1 on Reader Reply Card

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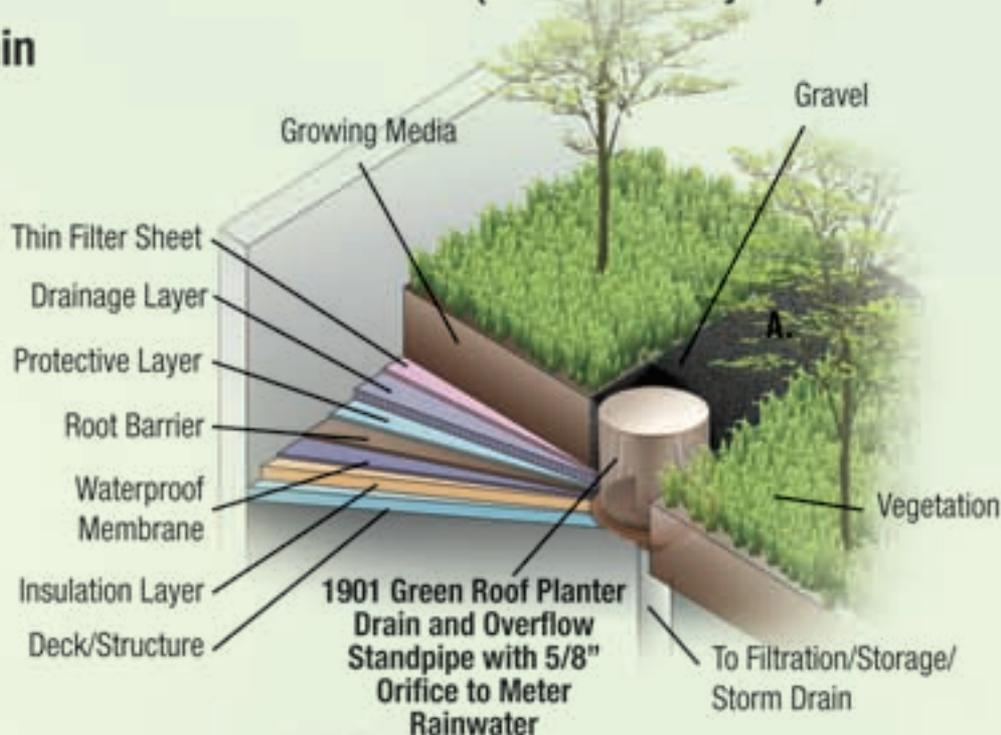
- built-in-place design,
- modular tray design,
- pre-vegetated mat system design, and/or
- cool roof design applications.

The drainage off a green roof surface is a particularly important component:

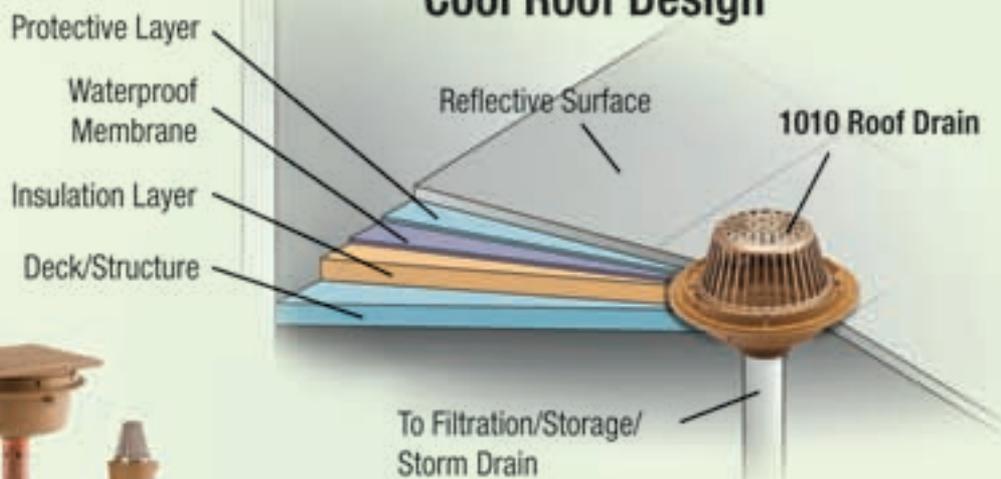
- to maintain optimum growing conditions in the growth medium,
- to managing heavy rainfall without sustaining damage to growth media due to erosion or ponding of water, and
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We have a line of green roof and cool roof drains that are engineered to work on extensive, intensive, multifunctional, and cool roofs.

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On the Cover

Phc News contacted the major manufacturers of tankless water heaters for their company profiles, synopses of their product lines, their viewpoints on the industry and green building, plus contractor FAQs.

Pictured clockwise on the cover from upper left are products from Rinnai, Bosch, Noritz and Rheem.

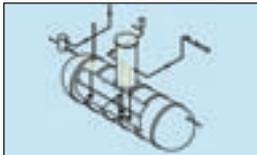
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Phc News interviews Marla Coffin, senior vice president and general manager of the Nexstar® Network, where member contractors have the advantage of business mentors and trainers to improve their bottom lines.

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Rainwater harvesting has advanced far beyond the old rain barrel. Once popular only among a few eco-freaks, harvesting now is going mainstream as water-use restrictions and prices are on the rise, and more municipalities mandate it for new construction.



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G U A R A N T E E D F O R L I F E

Circle 4 on Reader Reply Card

Aalberts to acquire 100% of Conbraco shares

AALBERTS INDUSTRIES N.V., based in The Netherlands, has reached agreement with the management of Conbraco Industries Inc. to acquire 100% of the shares. Conbraco Industries is a leading manufacturer of a complete package of bronze, brass, steel and stainless steel valves and a range of backflow preventers sold mainly in the commercial, industrial and consumer market (retail) under the strong brand name “Apollo” Valves. The acquisition will be effected after finalizing all formalities and approvals, which is expected mid-July 2010.

Conbraco Industries, “Apollo” Valves, is a key player in the North American market for ball valves, safety, relief and check valves, strainers and a new patented range of stainless steel and casted backflow preventers for the commercial and fire protection markets. Additionally, the company has a strong position in the industrial market with U.S.-made steel and stainless steel valves. Toward the consumer products market, Conbraco Industries of-

fers different product lines and a complete service through a separate business unit.

With more than 1,000 employees, Conbraco Industries generates an annual revenue of approximately \$200 million. Conbraco Industries operates three manufacturing facilities in South Carolina: two in Pageland and one in Conway. The head office is based in Matthews, N.C.

Conbraco Industries was founded in 1928 by Clarence Mosack, grandfather of the current generation. The president of Conbraco Industries, Glenn Mosack, and his management team, will remain with the company.

Based on three strong brands, the “Apollo” Valves together with EPC (Elkhart Products) metallic fitting range and the LASCO Fittings’ plastic fittings and other products, Aalberts Industries Flow Control can realize a more complete offering to the residential, commercial, consumer market, fire protection and industrial market in North America. The specification, sales and distribution channels of these three organi-

zations will be working together to realize a strengthened and focused sales approach per market segment.

The “Apollo” Valves range consists of many products which can also be sold through the existing sales and distribution network in Europe, where Aalberts Industries is present with own sales organizations in almost every country. Especially the product program of safety, relief and check valves and backflow preventers for commercial buildings is an extension of the portfolio in Europe.

Additionally, Conbraco Industries’ product portfolio for the industrial sector opens new markets in Europe. There are many opportunities for cross-selling that can be jointly developed, which will strengthen the market position in Europe. The dedicated management and sales approach and experience of Conbraco Industries’ business unit Consumer Markets gives a lot of potential in the future by introducing European product lines and concepts through the existing channels in the United States.

Wounded soldier’s family wishes granted

ATLANTA — When Adele Lester sent her 23-year old son, Specialist Walter Lester, off to war, she hoped it wouldn’t be the last time she would see him. Her worst nightmare nearly came true, though, when she received a call that Walter was involved in a roadside bomb attack in Afghanistan. He was seriously injured, but was the only one of his five-member company to survive.

The soldier’s mother, a 50-year old Ellenwood resident, now spends her time traveling back and forth from her

home in Atlanta to Washington, DC’s Walter Reed Army Medical Center.

“Ms. Lester has spent so much time taking care of others that she hasn’t had a chance to take care of the little things around the house,” said Angie Hicks, founder of Angie’s List. “That’s where the Wishmakers program and its group of highly rated service professionals step in to help those in need.”

Marietta plumber, Nick Marine, owner of Marine Plumbing, jumped at the chance to help a wounded

warrior. Marine, a retired U.S. Navy Senior Chief, agreed to donate his services to replace Lester’s kitchen sink and install a garbage disposal, a



Adele Lester of Ellenwood, GA tries out her new Pekoe kitchen faucet while GreenPlumber Nick Marine observes.

small luxury she has never had.

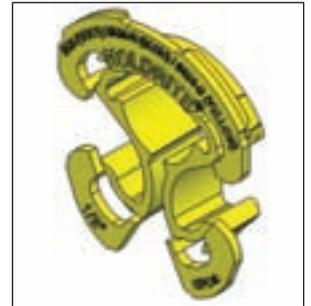
“There was never a question in my mind as to whether or not I was going to help out. I’m always privileged to help those in need,” Marine said.

To complete the job, Marine called in reinforcements from American Standard, which graciously donated the sink and fixtures. American Standard CEO, Don Devine, said he was happy to help. “The best part is making life a little easier for Adele during this most trying time,” Devine said. “We are thankful for her son’s service to our nation.” InSinkErator® provided the garbage disposal.

In brief

HOLDRITE Flame Fighter® gains U.S. Patent

VISTA, CALIF. — HOLDRITE® announced that it has been granted a U. S. Patent, which describes the use of polyvinylidene fluoride



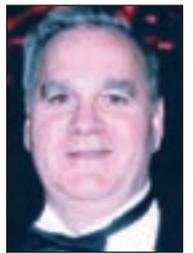
(PVDF) plastic in many types of pipe clamps and supports intended for use in building air plenums.

PVDF is one of the few plastics that can exceed the stringent ASTM E-84 25/50 flame spread/smoke development rating required by codes for use within building return air plenums. HOLDRITE Flame Fighter is the only product of its type protected by a patent for the use of PVDF material in a plenum application.

For more information about HOLDRITE Flame Fighter please visit www.holdrite.com.

Keith Bienvenu elected PHCC vice president

FALLS CHURCH, VA. — At its meeting held April 30, the Board of Directors of the Plumbing-Heating-Cooling Contractors — National Association (PHCC) elected Keith



Bienvenu of Bienvenu Brothers Enterprises, Inc., Metairie, La., as vice president of the organization.

The special election was necessary in order to fill the vacancy caused by the March 20th death of George Raburn, founder and co-owner of Raburn & Raburn Plumbing Company, Inc., of Stockbridge, Ga.

Zurn opens distribution center

PHILADELPHIA — This month, Zurn Industries, LLC will be opening the doors on a new inventory distribution facility in Philadelphia. This change brings Zurn’s total inventory distribution footprint to more than 1.7 million square feet in North America.

For more info, www.zurn.com.

Contractors claim double Contractor Rewards™ points with A. O. Smith’s New Products

ASHLAND CITY, TENN. — For a limited time, A. O. Smith Water Products Company (www.hotwater.com) is

points promotion is valid until Aug. 31, 2010.

As the title sponsor of the Contractor Rewards program, A. O. Smith is providing added value to its contractors around the U.S. By joining this free program, contractors can re-



doubling the Contractor Rewards™ points awarded to contractors who purchase any of its newly launched water heaters. Double points are awarded each time contractors redeem the product codes through the Contractor Rewards™ program. The A. O. Smith new products double

receive “reward points” when they purchase any number of water heaters from A. O. Smith. The points can then be cashed in for valuable prizes ranging from tools to golf clubs to home theater systems. For more info or to enroll for free visit www.ContractorRewards.com.



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~ M. Dorn, Plumbing Manager, Godby Plumbing and Heating, Indianapolis, Indiana

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Product Offering:
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- "Green" Technology
- Lower Installed Cost
- Prevent Hot Water Overrun
- Conveniently Control Hot Water



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Circle 5 on Reader Reply Card

Grundfos opens state-of-the-art testing facility in Europe

OLATHE, KAN. — On May 10th, Grundfos Pumps officially opened what is already being called the “most advanced fire pump test facility in the world.” An addition to the Grundfos production facility located in Wahlstedt, Germany, this state-of-the-art facility will handle fire pumps to be sold throughout Europe, the Middle East, Asia and Africa.

The “bare shaft” pumps sent from the United States (from the Grundfos acquired Peerless Pump facility in Indianapolis), will be assembled and tested in the more than 4,000-square-foot “test room,” which contains a 111,000 gallon test pit and the ability to ac-

commodate pumps with a capacity of 8,800 GPM, with electric motors or diesel engines up to nearly 540 horsepower. The fire pump systems assembled in the Wahlstedt



facility fully meet the approvals and high standards set forth by Factory Mutual (FM), NFPA 20,

VdS, EN12845, as well as many others throughout the world. In addition to fire pump testing, an extra tank with a cleaning mechanism was added to wash pumps for drinking water applications.

In addition to testing, the facility also will provide; on-site design and training at the company’s on-site training center, which incorporates a state-of-the-art guest house. Always with the customer in mind, Grundfos has even added a noise-proof room for customer witness tests. This facility is another example of not only Grundfos’ commitment to innovation and their customers, but to making the world safer place.

SolarLogic hosts first installer training

SANTA FE, N.M. — SolarLogic LLC, a Santa Fe start-up aimed at enabling any heating contractor across the U.S. to install solar heating, hosted its first training for installers by special invitation. This follows deployment of first-generation SolarLogic products in homes in New Mexico and Virginia and represents a key milestone in SolarLogic’s plans for delivering its products and services to the larger market at the end of 2010.

SolarLogic first made headlines in 2009 when the company won a local Economic Development Grant from the City of Santa Fe. Since then, the company’s focus has been on developing its flagship products, the SLIC (SolarLogic Integrated Controller) and the SLASH-D (SolarLogic-Assisted Solar Heating Design). The combination of these two products

manages the inherent complexity in solar heating system design and control, removing the burden of expertise from the installer. The training this month focused on the SLIC and was attended by heating contractors from New Mexico, Colorado and Virginia who will be installing the SLIC in homes this year.

“This event was a crucial step for us. We have been focused on product development for the past year and this was a great opportunity to get feedback from some very good installers on our control product. Our long-term business model is to provide training to installers, have them install the SLIC in solar heating systems designed by us, and then use the system’s internet connectivity to support their installations remotely,” said Fred Milder, CEO of SolarLogic.

RIDGID® launches 2010 ‘Roadshow’

ELYRIA, OHIO — The RIDGID® Reputation Roadshow kicked off its third season in March and runs through the end of September 2010 with stops in 34 cities throughout the U.S. and Canada. This year’s events feature new RIDGID tools and technologies



including RIDGIDConnect™, an online business tool that allows trade professionals to securely share, store

and simplify information for a project via a laptop computer or smart phone.

The latest in the RIDGID SeeSnake® Upgrade line of products will be on display as well, giving tradesmen at each stop the chance to experience and demo the new RIDGID technologies. Attendees will be given sneak peeks at upcoming product launches.

This will be making stops in Marlborough, Mass. (June 16), Dayton, Ohio (June 21), Indianapolis (June 21), Wilmington, Del. (June 22), Edison, N.J. (June 23), Detroit (July 14), Quebec City (August 17), Montreal (August 18), Columbus, Ohio (September 2), Louisville, Ky. (September 6), Newport News, Va. (September 15) and Nashville, Tenn. (September 29).

For more info, www.ridgid.com.

In brief

Eemax, Inc. names Louisiana distributor

OXFORD, CONN. — Eemax, Inc., a market leader in commercial and residential electric tankless water heaters, has named Billingsley and Associates, Inc., Kenner, Louisiana, its primary distributor for the Louisiana territory. For more info, www.eemax.com.

Cooper B-Line introduces Mechanical ‘Promise Program’

HIGHLAND, ILL. — Cooper B-Line, a global provider of innovative, labor-saving support systems and enclosure solutions for engineered facility subsystem applications, announced its Mechanical Promise Program, a valuable tool to help manage distributor inventory goals and increase their bottom line.

The Promise Program offers Cooper B-Line distributor partners an unrivaled mix of products, service, training and resources that will help increase sales and profitability for participating distributors. Participants in the Mechanical Promise Program will automatically receive shipping on qualified products within 24 hours, and will additionally receive priority handling for any requested quotation.

For info, www.cooperbline.com.

Water and wastewater facilities provided RFP guidance

BOSTON — In response to unprecedented support for energy efficiency across both private and public sectors, the Consortium for Energy Efficiency (CEE), in cooperation with the Water Environment Federation (WEF), releases the Energy Efficiency RFP Guidance for Water and Wastewater Treatment Facilities. The new guidance provides water utilities, cities and towns with ready-to-use language to help them include energy efficiency requirements in solicitations for design services.

Municipal officials may use this guidance to simplify and streamline the RFP process, to tap into federal funding streams and local efficiency program resources, or to make energy efficiency a standard feature of treatment facilities.

For more information, visit the CEE website at www.cee1.org and the WEF website at www.wef.org.

Seminar gives keys to unlocking hydronic balancing

EASTON, PA. — After the kick-off event at the new Cowboy’s Stadium in April, Victaulic and Tour & Andersson have announced the remaining 2010 event dates in the TA Hydronic College series for design engineers and facility owners.

The full list of seminar dates and locations are as follows:

- June 23 – Houston
- June 29 – Chicago
- September 9 – Vancouver, BC
- September 23 – New York
- October 5 – Kansas City, MO
- October 27 – Washington, DC
- November 2 – Phoenix
- November 16 – Los Angeles
- December 2 – Atlanta

Attendees will benefit from a detailed overview of the theory and practical application of hydronic design and balancing, and the “key conditions” needed to meet challenges:

- **Key Condition 1: Design Flow Availability**
 - Sources of Imbalance
 - The Costs of Discomfort
 - Balancing Methods for Hydronic Modules
- **Key Condition 2: Differential Pressure Variations**
 - Control Loops and Control Valve Authority
 - Control Valve Sizing and Differential Pressure Control
- **Key Condition 3: Compatibility Between Flows**
 - Obtaining Correct Room Temperature at Optimized Energy Costs
 - Solutions and False Solutions
 - Optimizing Production and Distribution Flows

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Circle 6 on Reader Reply Card

Knaack celebrates 50 years on the job

CRYSTAL LAKE, ILL. — Knaack LLC, known as one of the most trusted name in jobsite security, is celebrating its 50th anniversary with a year-long roster of events involving end users, distributors, employees and the Crystal Lake community.

Knaack officially kicked off its

50th anniversary at its Crystal Lake headquarters with a May 6 press day, followed by an employee celebration May 8.

Founded in 1960 to supply jobsite boxes to a construction supply house, Knaack began in a modest 2,000 square-foot facility. It has

since expanded its headquarters location to more than 400,000 square-feet with 285 employees.

Knaack is expressing its thanks to those behind its 50 years of success in several ways:

- For end users, the celebration kicks off with the company's "Nifty

Fifty Jobsite Storage Giveaway," which is an ongoing, online sweepstakes and product giveaway, as well



as the unveiling of a special edition anniversary jobsite chest, the Limited Edition KNAACK® Model 50 Jobsite Storage Chest.

- For distributors, Knaack will run an anniversary marketing campaign and a pre-order product discount.

- For employees and their families, Knaack will host an open house at its headquarters in Crystal Lake, Illinois. Employees, their families, and members of the community will be on hand for special festivities for the day. Additional celebratory activities are planned throughout the year.

- For the local community, Knaack will donate five Limited Edition KNAACK® Model 50 Jobsite Storage Chests to the Crystal Lake Park District for use on municipal ball fields.

Taco's FloPro Neighborhood appeals to many interests

CRANSTON, R.I. — Taco is building a community. Taco's new, online FloPro Team Neighborhood is a unique learning and social environment where professionals come to gather, share notes, ideas, successes and challenges.

"The Neighborhood gives contractors and hydronic professionals a place to ask questions, share jobsite experiences, photographs and advice with other like minded professionals," said John Barba, Taco's contractor training and trade program manager.

According to Barba, the Neighborhood is where contractors, worldwide, can discuss all things relating to hydronics and home comfort, the



latest solar thermal technology, and even the newest motorcycle, fly fishing gear or titanium driver. Visit <http://flopro.taco-hvac.com>.

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Circle 7 on Reader Reply Card

Archdiocese of Saint Louis receives \$180,000 in energy rebates

ST. LOUIS — The Archdiocese of Saint Louis has significantly reduced its carbon footprint and positioned itself for future energy savings through a partnership with Murphy Company and Laclede Gas, earning \$180,000 in rebates from Laclede.

Laclede presented a check to cover the cost of audits, tune-ups and boiler replacements completed at 45 sites within the Archdiocese.

Murphy's Energy Solutions Group teamed up with Laclede Gas' marketing department to work with the



From l to r: Thomas Schultz, CMVP, LEED-AP, manager, utilization engineering, Laclede (St. Charles, Mo.); James E. Hearing, director-marketing, Laclede (Ballwin, Mo.); Mike Spotanski, senior vice president, operations and marketing, Laclede (Troy, Ill.); Robert Palisch, manager-Archdiocesan building projects (Glendale, Mo.); Ryan Thompson, service project manager, Murphy (Ladue, Mo.); and Patricia Dussold, energy solutions coordinator, Murphy (O'Fallon, Mo.).

Archdiocese's real estate office and educate its parishes on the Laclede Gas Conservation and Energy Efficiency program and the Laclede Gas Commercial/Industrial Rebate Program, including the value of performing energy audits. Schools, churches, rectories and one orphanage took advantage of the program. With Laclede's help on conducting the audits, Murphy found issues ranging from inoperable controls and water leaks to inefficient boiler and air handler operation and lack of temperature control at heating radiators. Solutions included everything from simple tune-ups and maintenance work to boiler replacements.

One example is Bishop DuBourg High School, where Murphy began with a commercial building audit based on the Laclede Gas Rebate Program. Based on the results, Murphy replaced the school's 57-year-old boilers, handling all design and energy calculations and obtaining more than \$9,000 in incentives from Laclede Gas to offset the cost of more energy-efficient equipment. Bishop DuBourg will save an estimated \$13,000 per year due to the energy savings of the new boiler. Murphy also performed steam trap maintenance that will save up to 20 percent annually on gas bills.

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Area	\$/gal.	Change
U.S. average	2.728	↓
East Coast	2.724	↓
New England	2.801	↓
Central Atlantic	2.771	↓
Lower Atlantic	2.666	↓
Midwest	2.629	↓
Gulf Coast	2.644	↓
Rocky Mountain	2.819	↓
West Coast	2.976	↓
California	3.024	↓

DIESEL

Area	\$/gal.	Change
U.S. average	2.980	↓
East Coast	3.005	↓
New England	3.064	↓
Central Atlantic	3.121	↓
Lower Atlantic	2.950	↓
Midwest	2.940	↓
Gulf Coast	2.936	↓
Rocky Mountain	3.061	↓
West Coast	3.082	↓
California	3.094	↓

METALS

*Copper	\$2.93/lb.	↓	*Aluminum	\$.87/lb.	↓
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Prices valid as of 5/31/10. Fuel information courtesy of the U.S. Department of Energy <http://tonto.eia.doe.gov/oog/info/gdu/gasdiesel.asp>. Arrows indicate change from previous issue.
* Copper & Aluminum prices according to metalsprices.com.

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Circle 8 on Reader Reply Card

Plumbing Industry Council assists local St. Louis families

ST. LOUIS — More than 50 families benefited from the time, talent and donations of local union plumbing contractors as part of the Annual Rebuilding Together St. Louis event held on May 1, 2010. Plumbing Industry Council (PIC) contractors, supplier members and members of Plumbers' and Pipefitters' Local #562 joined together in providing plumbing repairs and home renovations

for elderly, low-income and disabled residents in the St. Louis area.

Rebuilding Together St. Louis 2010 is a special event the Plumbing Industry Council and Plumbers' & Pipefitters' Local #562 are proud to take part in as way to give something back to the community. Contractor members of the Plumbing Industry Council donated service trucks loaded with tools. A wide

array of plumbing products (sinks, faucets, toilets, etc.) were also donated by Plumbing Industry Council affiliate (supplier) members. Finally, more than 200 members of Plumbers' and Pipefitters' Local #562 donated their time and talent to assist those in need.

The homes for Rebuilding Together St. Louis are selected after being referred to the program by churches, neighborhood and community service organizations. Individual homeowners can also request services of the program. Applications are prioritized based upon needs and qualifications before final selections are made.

ARS/Rescue Rooter aids Nashville residents

NASHVILLE — This spring, Nashville residents encountered epic flooding that killed nearly two dozen people and the damages are estimated in the billions.

ARS/Rescue Rooter, a national service company with offices across the United States, strongly believes in supporting the communities it serves, and was determined to help out in any way it could.

First, ARS/Rescue Rooter hit the streets of Nashville and cooked meals for residents whose homes had received significant flooding and were in need of immediate assistance. In some cases, the service center employees even beat the Red Cross and Emergency Management

support services.

ARS/Rescue Rooter also distributed important information homeowners would need about restoring their air conditioning units and



ARS/Rescue Rooter of Nashville staff serve food to residents in need.

home appliances to working order after the disaster.

For info, visit www.ARS.com.

Mr. Rooter® Plumbing in Haiti to help with cleaner water

MR. ROOTER PLUMBING, with the help of 3M Clean Water Solutions, is making cleaner, fresher water a reality for Haitian earthquake victims.

During a week-long trip, they taught women in Haiti how to test, bag and sell water. But it doesn't stop there. These companies hope selling water can become a trade for Haitian women.

"We want to give Haitian women the opportunity to have a business that stretches past the rebuilding efforts," said Mary Kennedy Thompson, president of Mr. Rooter Corp. "While we want to give them some-

thing sustainable, we also want to make sure they have clean water to drink now."

Thompson said Mr. Rooter Plumbing could not do this without 3M Clean Water Solutions and its engineer Satish Chamylumani, who is also on the trip. He brought bags and test kits his company is donating to make this venture possible.

Once they completed this project, Thompson and Derek Moreland, co-owner of the Mr. Rooter franchise in Toronto, were headed to a town north of Port-au-Prince. They will scope out the town's plumbing challenges.

NGWA compiles data on regulation of geothermal heat pump systems

WESTERVILLE, OHIO — Geothermal heat pump system installations are regulated in most U.S. states, but there is little data tracking the number and type of such systems being installed, according to a new survey cosponsored by the National Ground Water Association (NGWA).

The "2009/2010 Geothermal Heating and Cooling Systems State Regulatory Oversight Survey" represents the most complete, accurate, and up-to-date information for geothermal system regulation available. It is designed to allow readers to easily compare state-by-state regula-

tions as well as aggregate data on all responding states.

The other survey cosponsors are the Ground Water Protection Council, GeoExchange, and the International Ground Source Heat Pump Association.

The survey results are free to NGWA members. Non-members can purchase the survey results by through the NGWA bookstore at www.ngwa.org.

NGWA, a nonprofit organization comprised of more than 13,000 U.S. and international groundwater professionals — contractors, equipment manufacturers, suppliers, scientists, and engineers — is dedicated to advancing groundwater knowledge.



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New criteria for ENERGY STAR® water heaters

Higher efficiency storage water heaters gain new recognition

As a plumber, you are your customers' access point to the water heating world. Your customers view you as the expert on hot water, and it's you who they will come to when they have questions about water heating efficiency. It's possible that your customers may come to you with questions about ENERGY STAR® water heaters.

Today, 77% of households recognize the ENERGY STAR® label, up from 41% 10 years ago. Seventy percent of households demonstrated a high understanding of the labels meaning, up from 37% ten years ago.¹ As higher efficiency becomes a priority to your customers, it's important for you to be aware of how the ENERGY STAR label applies to water heaters.

Upcoming ENERGY STAR changes

Higher efficiency, ENERGY STAR qualified water heaters offer your customers greater energy savings. An increase in ENERGY STAR criteria for gas-fired storage water heaters is just a few months away as the label seeks to keep pace with technological developments that offer energy savings. More storage water heaters

0.62 EF, the DOE was able to create a foundation for ENERGY STAR in the water heating market, increasing buyer awareness and demand for qualified water heaters. Also, many fewer 0.67 EF models were available at the time, but as the market has evolved, manufacturers have continued to offer more qualifying models.

What this means for you and your customers

Water heaters that meet the increased criteria of 0.67 EF are much more efficient than those that meet current criteria, using significantly less gas than water heaters with a 0.62 EF. If you or your supplier has 0.62 EF water heaters labeled with the ENERGY STAR in stock after September 1, you can still sell them as ENERGY STAR compliant models until they are gone.

For many 0.67 EF gas storage water heaters, increased efficiency is made possible by power venting, which allows the system to heat water more efficiently and often requires electric power. Because a power vent pushes air out and pulls air in faster than standard venting models, power venting systems can

these products will be available in your area.

With so many improved gas storage water heaters available, there's no reason your customers can't start saving now. The ENERGY STAR label covers a variety of categories of water heater including electric heat pump, solar thermal, and tankless units. Sponsors of the Coalition for ENERGY STAR Water Heaters (CEE) — Rinnai, Rheem, Bradford White, and A. O. Smith — offer many of these models. Many states and local utilities are offering incentives for energy efficient purchases. Visit the Coalition online for more information on local utility rebates at www.eswaterheaters.org, and ask your local rebate administrator about what rebates are available in your area.

About ENERGY STAR

Established in 1992, ENERGY STAR is a joint program of the United



BY KARA RODGERS

States Environmental Protection Agency and the United States Department of Energy designed to save money and help address climate change through energy-efficient products and practices at home and at work. For more information, visit www.energystar.gov or call 1-888-STAR-YES. ■

1. According to the Consortium for Energy Efficiency's 2009 ENERGY STAR Awareness Survey.

Kara Rodgers is Natural Gas senior program manager for CEE and directs a three-person natural gas team responsible for guiding and growing CEE's initiatives focused on natural gas savings.

Grand Hall continues F.A.S.T. program for new unit

Contractors learn the ins and outs of the new Eternal Condensing hybrid tankless water heaters

DALLAS — Grand Hall's Factory Authorized Service Technician (F.A.S.T.) program (eternalwaterheater.com/support/contact_us.aspx) designed to provide reliable and quality installation and repair service to Grand Hall's water heating systems, held its first training session for the new Eternal Condensing hybrid water heater in Chicago, during the year's first quarter.

"The class was pivotal to our understanding of the new Eternal Condensing unit. Right now we can't even keep the new unit in stock," commented Bill Firestone, sales manager for Banner Plumbing. "The class was great. The style of the sessions is easy-going and interactive. After finishing the class, all attendees had acquired the necessary expertise."

Led by F.A.S.T. program developer Jim Firlein, the class involved more than 40 Chicago-area contractors who filled two full classes. By focusing the session solely on the new Eternal Condensing, attendees were able to gain complete understanding of the

unit's benefits and features as well as necessary installation knowledge.

The class is a supplement of the F.A.S.T. program which provides each contractor member with ongoing training, factory support and one-on-one instruction. Participating contractors reap the benefits of lead generation from inquiries on the Eternal web site where each F.A.S.T. member is indicated by a star symbol.

Jim Firlein, Eternal's Mid-Atlantic regional sales manager and F.A.S.T. program developer, said, "Previously, due to the full year warranty on labor, if these contractors got a call back within that year they would have to fix the problem on their dime. Now we prepare the contractors to ensure everything is installed correctly the first time and the contractors are being reimbursed by Grand Hall, Eternal's manufacturer, for their time."

For more information on becoming F.A.S.T. certified or to learn more about on Eternal Condensing Hybrid, visit www.eternalcondensed.com, email Eternalsales@grandhall.com, or call toll free, 1-877-934-7455 from 7am to 7pm CST, M-F.

Type of ENERGY STAR Water Heater	0.62 Gas Storage	0.67 Gas Storage	Whole-home Gas Tankless	Solar	Electric Heat Pump
Annual Consumption Estimate	242 therms	224 therms	183 therms	130 therms	2195 kWh
Annual savings	Up to 7.3% compared to a standard efficiency gas unit	Up to 14% compared to a standard efficiency gas unit	Up to 30% compared to a standard efficiency gas unit	Up to 50% compared to a standard efficiency electric unit	Up to 55% compared to a standard efficiency electric unit
According to the U.S. Department of Energy 2009 Water Heater Market Profile					

of higher efficiency are becoming available and will be recognized by ENERGY STAR.

On September 1, 2010, the minimum Energy Factor (EF) for gas storage water heaters will increase from 0.62 to 0.67. Criteria for all other water heater technologies recognized with the ENERGY STAR label will remain unchanged.

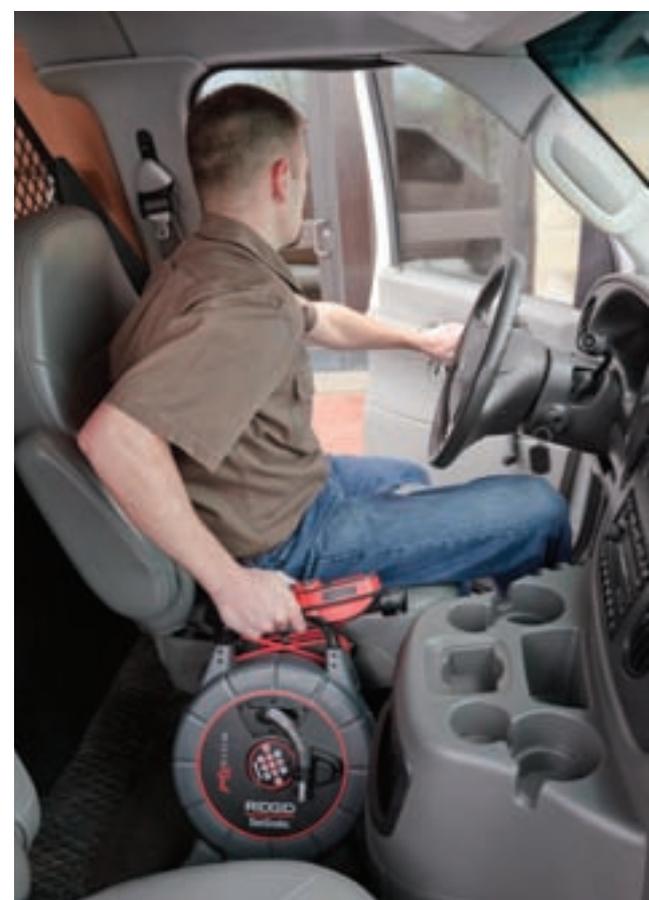
Water heaters first gained the ENERGY STAR label in January of 2009 with an EF minimum of 0.62 EF for gas storage water heaters. The Department of Energy (DOE) recognized this as a starting point from which families could begin saving money and energy. While models with a 0.62 EF are a good start, 0.67 EF models will help them save even more.

By setting the initial criteria at

go through the wall or upward through the roof to the outdoors. However, some manufacturers offer 0.67 EF water heaters that can be commonly vented with other gas-fired appliances. Be sure to follow manufacturers' installation instructions and to talk through the installation requirements with your customers.

Find out more about what's available in your area

Several gas storage heaters with 0.67 EF are available on the market now. Manufacturers such as A. O. Smith, Bradford White, and Rheem offer a variety of ENERGY STAR rated gas storage water heaters, including many new models created in preparation for the upcoming criteria change. Ask your wholesaler when



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POWER TOOLS

Nexstar® Network provides needed value

As a plumbing and heating service professional it is always a good thing to have the best resources at your disposal. One such resource is Nexstar® Network. Nexstar® Network, founded in 1992 as Contractors 2000, is a business-development and best practices organization delivering comprehensive business training, systems and support to independent home service plumbing, heating, air conditioning and electrical professionals across the continent. Nexstar currently has 390 member companies across the continent. Nexstar helps help business owners get rapid results guided by experienced coaches, surefire systems and incredible peer connections.

Nexstar coaches and member

that happen, but know that they need and want help doing it.

Nexstar offers a choice of memberships to meet each company's differing needs. Some companies want quick, aggressive growth, some want specific business refinements and others want to strengthen the fundamentals or build stronger marketing. You choose the membership approach that's right for you.

New members make a commitment to being "simply the best" in customer service, profitability and employee satisfaction. Membership also begins with acceptance of the Nexstar Code of Ethics and a commitment to uphold it, from our staff in our home office to our business owners and their technicians in the field.

Phc News: What are the goals of Nexstar (short term & long term)?

Marla Coffin: Nexstar's overall goal is to be the organization of choice for plumbing, heating, cooling and electrical service providers and to continuously develop our resources and services to meet their ever-evolving needs.

We will continue to carry out the mission of our founder Frank Blau: "Member by member, uplift the whole industry by setting the standard of excellence."

Phc News: Is the objective to gain unlimited new members or is there a certain number to hit?

Marla Coffin: Nexstar membership is allocated by market areas and because we want our members to be "simply the best" in their market, the only restriction is market availability. We limit membership so we can be responsive, not exclusive. We support members who truly want to raise their business level and set the standard for independent service providers.

Phc News: Take me through the process of joining Nexstar. What are the steps of a new member should experience?

Marla Coffin: Once you join, you are immediately assigned to a business operations coach who becomes your private advisor and together; you dive in and determine the top strategies to focus on to benefit your

business over the next twelve months and beyond. Once we make that determination, your job is to start implementing with our help.

We're at your side that first year, intently guiding you and you'll get rapid results because you'll have access to proven systems and training, a bench of experienced coaches, and mentoring from peers who will willingly share their secrets of success with you.

Phc News: Tell me a little bit about Nexstar meetings, conventions.

Marla Coffin: Nexstar schools and events are designed to help members move their businesses forward faster using tried and true business systems. Here are some examples of what is available to our members:

Schools get member teams firing on all cylinders:

- New Member Boot Camp
- Nexstar Service System
- Call Center School
- Service Management
- HVAC Sales Management
- Nexstar HVAC Sales System
- Executive Leadership
- AC Planning Workshop
- Train the Trainer

Super Meeting (Fall) Owners Spotlight Series (Spring)

Super Meetings are what the name implies: the biggest event for Nexstar member owners and managers; crammed with success-build-

"As a result of implementing Nexstar's proven systems and working with their coaches, we have grown our revenues to more than \$5 million, in spite of the economy."

— Bob Hamilton, Member since 2003 and owner of Bob Hamilton Plumbing, Heating & A/C.

ing seminars, networking with peers, a vendor tradeshow, fun, and time to think about where your business is going.

Owners' Spotlight Series is a well-attended member event providing solutions for one critical challenge in the management of today's progressive service companies.

Both of these events deliver:

- Non-stop learning and interaction with coaches and peers;
- World-class speakers and top industry consultants who give you insight and advice;
- Opportunity for one-on-one (Turn to Business... page 18.)



Marla Coffin, senior vice president and general manager of Nexstar® Network

“ Nexstar systems bring order to chaos, transferring dependence upon staff to dependence on the system. They help hold staff accountable and are proven to increase revenues and increase satisfaction among the customers our members serve.

Members share experience and insight with each other. Best practices from across the continent are available for you to learn from and apply within your own business. We build relationships by helping each other, thinking together and incorporating what others have already, tested, proven and implemented.

Nexstar is the college of knowledge in business education and training. We offer continuous support, training for every role in your company, financial reviews, yearly business and marketing plans, custom marketing advice and top shelf customer service from staff.

The proof is in the rapid results. Because Nexstar is owned by its members, all fees stay within the organization. We do not create wealth for the organization itself. We minimize operating expenses and channel virtually all-remaining funds to research and development and deliver a massive array of useful programs, materials and member services supported by a professional staff. Nexstar attracts members by offering a better way, but it earns loyalty by delivering it.”

trainers come from the industry and have owned and operated businesses within it. They have seen and solved the challenges you face. They guide, advise and mentor members and show you the rewards of accountability.

Recently, *Phc News* conducted an exclusive interview with Marla Coffin, senior vice president and general manager of Nexstar® Network:

Phc News: How does one become a member or affiliated with Nexstar?

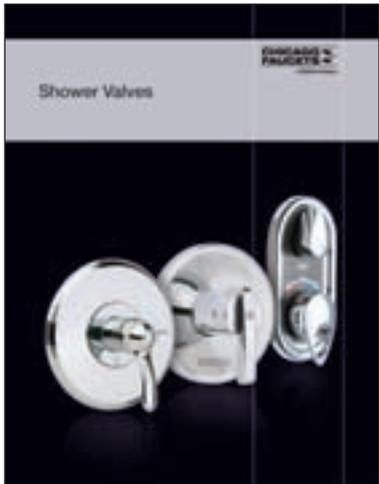
Marla Coffin: New members come to Nexstar with an innate passion and desire to grow their business. They believe they can make



Nexstar's Coaching Bench helps you get rapid results: Left to right: Susan Kimball (marketing coach), Ed Cerier (marketing strategist), Jack Tester (coaching manager), Jodi Peter (business coach), Jim "Bone" Hamilton (business coach), Scott Pearson (new member development coach).



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Chicago Faucets & The Buy American Act

The American Recovery and Reinvestment Act recently signed into law includes a Buy American provision favoring domestic sources. Selecting products that meet the requirements of this Act can help support jobs across the USA and assist in our economic recovery. Over 95% of Chicago Faucets products, more than 1,700 items, meet these requirements. Chicago Faucets... unwavering commitment to quality, backed by know-how and determination that is uniquely American.

Circle 44 on Reader Reply Card

Chicago Faucets Expands Electronic Lavatory Faucet Offering

Chicago Faucets most recent efforts to unite reliability and durability with electronic faucet convenience has resulted in the E-Tronic® 40. The new line features above-deck electronics for easy maintenance, long-term reliability, and offers a choice of a CRP2 battery or AC adaptor. Uncomplicated installation, easy maintenance and reliability, combined with the water conservation and added hygiene offered with hands-free faucets, make the E-Tronic® 40 an attractive choice for public lavatories.



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A New, Economical Option for Lavatory Installations

The new 420-CP Single Control Lavatory Faucet from Chicago Faucets combines the durability of solid brass body construction with the dependability of a time-tested ceramic mixing valve. Other features include a polished chrome plated finish, metal lever handle, temperature limit stop, volume control, and a 1.5 GPM laminar flow outlet. Easy to install and easy to maintain, the ADA compliant Chicago Faucets 420-CP is a great option for any commercial project.

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Business owners win with Nexstar®

(Continued from page 16.)
meetings and straight talk with other members;

- Answers to your top of mind questions;
- Inspiration and renewed energy to return to your shop and begin implementing what you've learned; and
- Energy and inspiration!

Nexstar Peer Group Meetings

Nexstar conducts peer group meetings so members have the opportunity to see and learn from the best-run companies. Meetings are hosted by member companies that

open their business, their books and their secrets to fellow members; owners and managers of independent plumbing, HVAC and electrical contracting companies. It's three days of intense mentoring and participants walk away with tangible strategies that have led to documented success. Peer Group meetings set the standard and raise the bar for other professionals to live and work by.

Phc News: Briefly describe the important of Nexstar coaches.

Marla Coffin: Nexstar coaches have over a century of combined in-



A Nexstar business coach works one-on-one with Bob Hamilton, owner of Bob Hamilton Plumbing, Heating & AC.



dustry experience and have owned and operated businesses within it. They provide an objective outside

from our staff in our home office to our business owners and their technicians in the field.



Members connect and share knowledge and support.

perspective and guide you through action steps that lead to success. They focus on you and your business, not generalizations and will continue to guide you throughout your business growth and success.

Phc News: Would a Nexstar member be considered a preferred contractor to consumers?

Marla Coffin: Yes. When a homeowner hires a Nexstar member company, they can feel confident that they are getting the best in customer service and business ethics.

Membership begins with acceptance of the Nexstar Code of Ethics and a commitment to uphold it,

All new Nexstar members go through background checks, including a BBB assessment, credit checks and verification of a current business license in good standing.

Nexstar strives to operate under the Better Business Bureau's mission of advancing marketplace trust. In fact, colleagues often refer to our organization as a "mini BBB," which is one of the highest compliments we receive. We're selective, we recruit members with high standards and we hold them to it through our training programs and checks and balance systems, including a four-member ethics committee. ■



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Circle 15 on Reader Reply Card



BY DAN HOLOHAN
contributing writer

Pressure?

I came across a story about a project that Grundfos has underway in Europe. It seems that there are a lot of leaky water pipes in Europe, and the higher the water pressure gets, the more the pipes leak. That shouldn't be a surprise. The folks at Grundfos came up with what I thought was a neat idea for helping that situation (short of actually fixing the pipes). They put more pumps in parallel so that they could shut some down when the water usage is at a lower point. They control the pumps remotely with software that knows the traditional amount of water people are using. The software teaches the pumps what to do from there, based on what the people are doing. I thought that was cool, so I wrote about it in the free e-newsletter that I send to my subscribers every Thursday morning.

One of the subscribers, John Brooks, lives in England and had this to say.

The piece about water pressure is old news here in the UK — and the pack of trouble that came with it! Thames Water, the provider of most of the drinking water in London, has major infrastructure problems. The old cast-iron street mains, some laid more than 100 years ago, are breaking up and there has been a huge replacement job going on for the last several years. While there are still some fragile and leaky pipes around, reducing pressure is a cheap way of minimizing bursts and leakage loss, and that's exactly what Thames Water has been doing. Under legal statute, it needs to provide potable water at minimum 1 Bar at the street connection to a building. Trouble is, if the building is more than 30 feet high, the water won't make it to the roof tanks! Booster sets are an answer but then you also need a "break tank" at or below street level before the pump. "Where to site pump and tank, with many buildings in the centre of town," you may well ask. Pressure reduction is not a universal solution.

So there.

I love hearing from people in foreign lands. It keeps me balanced. I wrote back to John and told him about the water pressure problems we have here in New York City, and about these old-school wooden tanks that we have on most of the roofs. Look at any photo of a New York skyline; you'll see those tanks. Rosenwach made most of them, and they last forever. Galvanized steel bands hold the wood in place (no nails anywhere). The wood swells and that's that.

In London, John tells us that the water won't rise more than 30 feet. We get about twice that in NYC. If your building is taller than six stories, you'll need a pump to get the water to those upper apartments, and that's where the Rosenwach tanks come in. There will be a house pump in the basement, right on the cold-water supply to the building. Its job is to fill the tank on the roof. From there, everything just falls straight down. The cold water feeds directly to the faucets. The hot water works like this: The pump fills the tank with cold water. The cold water falls down into the boiler's coil (or the water heater). It gets hot and then rises up again to the hot-water taps in the apartments. Up and down and up again.

The best part of all of this is that the folks with the most money, those who live on the upper floors, or in the penthouses, have the worst water pressure you can imagine. They get soapy in the shower and can't get the soap off, so they get aggravated, and when rich people get aggravated, opportunity knocks.

When I used to work for the manufacturer's rep, we sold pumps, and lots of them. We had this standard, base-mounted, 3,500-RPM little beast that we'd tell the contractor to tuck under a sink or in a closet, or wherever the rich guy would allow. We'd also sell them a small pres-

sure tank so that the little beast didn't start whenever the rich guy drew a glass of water during the night. And there'd be a pressure switch, of course, to turn on the beast when the pressure in the little tank dropped off.

That pump did a brilliant job of washing off the soap and it solved their problem. We made a nice business of it because we had come up with something that solved a problem. Funny how that works. You find a problem, come up with a solution, and folks buy from you because, most of the time, they'd rather have the solution than the problem. It was our way of not participating in recessions. We looked for problems.

When The Lovely Marianne and I started our business in 1989 (and this was before I had written my first book), I did a lot of in-the-field consulting. This was the continuation of my career as a Contractor Boy for that rep. I had spent years with contractors in and around New York City, looking for problems and finding business. When TLM and I struck out on our own, I would go anywhere and look at anything because we were hungry, and so were our kids.

The board of a small co-op apartment building in New York City hired me to solve a problem they were having with water pressure. During the summer, lots of kids open the fire hydrants to cool off. This causes the water pressure to drop, and the folks who owned this five-story co-op didn't have enough water pressure to take a decent shower, so they had hired a plumber and he installed a 20-HP, base-mounted pump on their water main. This would certainly boost the water pressure coming into the building.

As I was telling you, that's a pretty common application in New York City, and done right, it works beautifully, but to do it right, the system has to include that pressure tank that's suitable for city water, and a pressure switch to start and stop the big pump. The folks who owned this particular building decided to save money by not buying the tank and the pressure switch. They just ran that big pump 24 hours a day, whether or not people were using water.

The problem started one morning when a tenant turned on the cold water in his shower. Steam came out of his showerhead. The folks in the building wanted to know why, so I told them that when you run a pump dead-headed, the energy that's going into the pump and not coming out as motion in the water will quickly turn to heat. I shared this formula with them, but their eyes glazed over:

$$\text{Temperature Rise (degrees Fahrenheit)} = \frac{5.1 \times \text{BHP (at shut off)}}{\text{Volute volume in gallons} \times \text{Specific Gravity} \times \text{Specific Heat}}$$

Just for fun, let's imagine a pump that contains about seven gallons of water and has a 40-HP motor. Throw in 200 feet of 3" pipe containing another 76 gallons of cold water. Now run the pump but don't give the water a place to go. That's what they were doing overnight in that building. Here's what you'll get:

$$\text{Temperature Rise} = \frac{5.1 \times 20 \text{ BHP}}{83 \text{ gallons}} = 1.23 \text{ degrees/minute of operation}$$

Their pump was half that size but it was still turning the cold water to steam overnight. It took me a while to convince them that this can happen, but they finally believed me and bought the tank and the pressure switch.

Feeling recessionary pressure? Go look for the problems, whether they be leaking water mains, buildings that are too tall for the city water pressure, steel tanks that don't last as long as good wooden tanks, pumps installed on the cheap that turn cold water to steam. Look for the problems. That's where you'll find the business.

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- NYC water tanks
- Pressure pump solution
- Pressure pump problems
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BY BRISTOL STICKNEY
contributing writer

Solar heating design – computer software

I had the opportunity to attend the annual tradeshow of the Radiant Panel Association (RPA) a few weeks ago and sat in on the “Solar Heating” panel discussion. Based on the depth of knowledge of the people in that room, I would say that these were some of the most experienced solar heating “die-hards” around. When they were asked what solar heating design software they were using, the list was surprisingly short. RETScreen, T•SOL, Polysun and F-Chart were mentioned by satisfied users.

There is no substitute for thorough design analysis and computer software. The solar energy resource can change radically from day to day, month to month and from one location to another, so to accomplish a thorough analysis, the designer must have at least the monthly (if not hourly or daily) solar data for many different locations easily available and in a useful format. This is the essence of what these computer programs provide.

When running design software on the computer, you can evaluate how useful the program is by judging how quickly and/or thoroughly it provides the answers to the following basic design questions:

1. What is the monthly heating load?
2. How much solar energy is available for collectors at a suitable tilt and orientation?
3. How much solar heat is delivered and how much fuel is offset as a result?
4. How do the costs and benefits compare to other alternative design options?

All of the software we are discussing here provides answers to these questions to a greater or lesser degree. Some of the software mentioned here is free and the rest are available as trial or demonstration versions. So, there is no downside to exploring these programs on your own computer as time allows.

Weather data for computer-aided solar design

The most basic computer-aided design tool is the spreadsheet. I use weather data in spreadsheet calculations regularly as a quick way of processing 12 months worth of solar radiation and temperature data for fast comparisons. In this column a couple months ago I showed some sample graphs created on spreadsheets and mentioned that a good resource for this kind of climate data is the National Renewable Energy Laboratory (NREL) website. Their “Solar Radiation Data Manual for Flat-Plate and Concentrating Collectors” contains a summary for each of 239 locations across the U.S. can be obtained free on the Web at <http://rredc.nrel.gov/solar/pubs/redbook/> in PDF format as well as ASCII Data Files (comma delimited) that can be copied into spreadsheets.

I suspect that the reason this data manual is now out of print and available only on the Web, is because the

world of energy calculations is turning toward software-compatible digital data files. NREL is also a leading provider of such data files which are available as TMY (Typical Meteorological Year) and now EPW (Energy Plus Weather) and other standard formats. There are now thousands of locations where weather files are available in these formats. These are the kind of weather files

used by RETScreen and the other programs as inputs to their energy calculations for any of these locations around the world.

If you are wondering what is included in these weather data files, I would like to encourage you to peek inside and see for yourself. One easy way to do this is using the (free) Climate Consultant weather data visualization program. It can be downloaded from the UCLA Energy Design Tools Web page:

<http://www2.aud.ucla.edu/energy-design-tools/>.

There is a version for Mac OSX and a version for MS Windows. This program allows you to display the contents of EPW files which are available (free) from the Energy-Plus website:

<http://apps1.eere.energy.gov/buildings/energyplus/>.

Using this program you can easily inspect the latitude, longitude, elevation, Global horizontal and Direct Normal solar radiation, air temperature, dew point, ground temperature, wind speed, sun path, sun hours, and a multitude of other climate variables for over two thousand locations, based entirely on historical weather records. You can choose imperial or metric units to be displayed.

Of course, for solar heating design, what you really want is the Solar Climate Data converted into Solar Available on any tilted collector surface and energy collected day by day or even hour by hour. That capability is built into these solar design software packages using some pretty sophisticated solar radiation conversion routines (e.g. Perez, Hay & Davies, Reindl, etc.). The accuracy of solar conversion routines as well as the solar collector efficiency routines and other calculations would be hard to duplicate on a DIY spreadsheet, which is why the new software, especially the low cost and free versions are so attractive.

A brief sample of popular solar heating software

Let's start by looking at the tip of the software iceberg by focusing on programs that are lower in cost or free, and start with solar hot water analysis. Some programs that cover solar hot water also cross-over into solar combisystems, but not all of them.

Starting with the four programs acclaimed at the RPA solar panel discussion, I have assembled a quick comparison in Table 1 with my own additions of SAM and CombiSun.

F-chart

F-chart is the authoritative solar system analysis and design program written by S.A. Klein and W.A. Beckman, the originators of the F-Chart method developed at the University of Wisconsin. It has provided a high standard in solar heating analysis in the United States for decades. Its capabilities go well beyond solar water heating, and include the flexibility to handle passive solar collectors, pool heating, rock bins and thermal mass in buildings. It comes with 300 weather data locations and more are available. Results are output as monthly tables or line graphs. Life-cycle economics with cash flow are included.

Polysun 5

Polysun comes in three flavors — Light, Professional and Designer, with prices ranging from \$159 to \$1,499. It provides eye-popping graphics that make impressive sales presentations. SRCC collector data is built-in, eliminating manual data entry of collector efficiency parameters. It allows a large customizable component catalog and includes built-in weather data using Meteotest. It is especially good

(Turn to Software for solar... page 24.)

- No substitute for thorough design analysis
- Weather data in spreadsheet
- Powerful software available
- Huge variety for sale
- Capsule descriptions

Popular Low-Cost Solar Hot Water Heating Modeling Software				
Software	Source	Cost	Platform	Units
F-chart	F-Chart Software Univ. Wisconsin	\$400	MSWindows	Imperial or Metric
Polysun5 Light	Vela Solaris	\$159	MSWindows MAC OSX	Imperial or Metric
RetScreen	Natural Resources Canada	Free	MS Excel Spreadsheet	Imperial or Metric
SAM	NREL Solar Advisor Model	Free	MSWindows MAC OSX	Metric
T•Sol Express	ValerIn Software	\$195	MSWindows	Imperial or Metric
CombiSun	European Solar CombiSystem Project	Free	MSWindows	Metric

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Software for solar installations

(Continued from page 22.)

for solar thermal simulation going well beyond solar water heaters, including grid tie PV and heat pump simulation. Outputs include solar fraction, hourly energy usage for system and components, economic analysis.

RETScreen

Software for evaluating energy production and savings, costs, emission reductions, financial viability and risk for various types of renewable energy and energy efficient technologies (RETs). Inputs are in spreadsheet format and vary with the type of project. Product data is included in software as well as climate data, with over 4,000 weather locations available. Default and suggested values for all inputs via manual or project database. This software's capabilities include renewable energy projects, cogeneration and district energy, plus a full array of financially viable clean power, heating and cooling technologies, and energy efficiency measures. All outputs are in Excel and can be copied, printed or saved to PDF format.

SAM

NREL, working in conjunction with Sandia National Laboratory and in partnership with the U.S. Department of Energy (DOE) Solar Energy Technologies Program (SETP), de-

veloped the Solar Advisor Model (SAM) starting in 2004 with ongoing efforts today. SAM combines a detailed performance model with several types of financing (from residential to utility-scale) for most solar technologies. The solar technologies currently represented in SAM (besides solar hot water) include concentrating solar power (CSP) parabolic trough, dish-Stirling, and power tower systems, as

There are more than 60 programs that do "Whole Building" energy modeling that are reported to include Renewable Energy in the analysis.

well as flat plate and concentrating photovoltaic technologies. It has a deceptively friendly user screen that tends to mask the impressive simulation engines under the hood.

T•SOL

T•SOL comes in 3 flavors — Express, Professional and Expert, ranging in cost from \$197 to \$1581. It is intended for the planning, analysis and simulation of thermal solar heating systems. It is a professional tool

for planners, engineers, energy specialists, and educational purposes. A large number of solar water heating systems, including space heating, can be modeled under varying parameters, with the results (temperature, energies, efficiencies and solar fraction) easily saved to file and presented in graph or chart form. Two extra modules are available in addition to the main program: the Swimming Pool module and the SysCat module for large-scale systems. Outputs include pre-formatted reports in graph and chart form, economic efficiency calculations. It is also possible for the user to define custom report formats and also features some stunning color graphics.

CombiSun

CombiSun is a PC tool for performance estimation of solar combisystems. It can estimate the performance of a number of different combisystem designs, under different climates and different loads. It is intended to be quick and simple design tool for architects, planners and engineers, and was developed within the framework of a European task force on Solar Combisystems (IEA-SHC Task 26 and EU Altener Project AL/297). It uses TRNSYS to calculate the load as well as the radiation on a collector for a given house and climate. This data is then used together with the thermal characteristics of the chosen combisystem to calculate the final energy savings compared to a reference, non-solar,

heating system supplying the same load. It requires the user to be familiar with the generic types of combisystems catalogued by the taskforce which are available in supporting documents. Presently it seems to be limited to locations only in Europe.

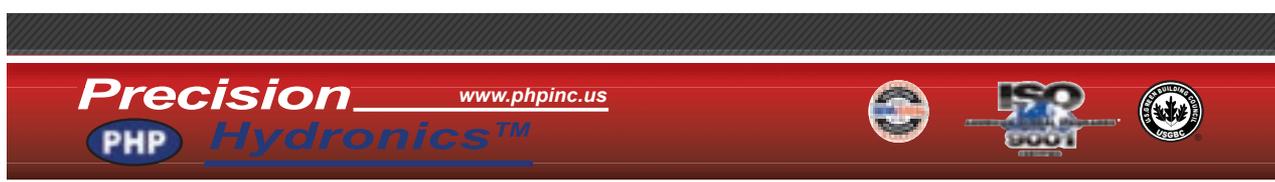
Under the tip of the iceberg

The software described above is only the tip of the iceberg when it comes to energy simulation tools for computers. A plethora of Energy Calculators and Software are listed by the U.S. Department of Energy on their Energy Efficiency and Renewable Energy website at: <http://www.eere.energy.gov/>.

Most of the programs discussed above are described in much greater detail on this website along with a huge collection of others too numerous to mention here. There are more than 60 programs that do "Whole Building" energy modeling that are reported to include Renewable Energy in the analysis. Many of these simulation programs include a solar water heater component. Some include passive solar heating, some allow active solar heating (combisystems), PV electric, natural lighting and many other energy efficiency measures. The one that I have used the most in the past is Energy-10, but lately, Energy Plus seems to be leading the way in the building energy simulation world and seems to include many more modeling capabilities (although it is much more difficult to learn). The direction that the best programs seem to be going, is making the inputs easier and more graphical. For example, Energy Plus now has a new "front end" called OpenStudio that allows the user to describe the building by drawing it in Google Sketch-up. Energy Plus, Openstudio and Sketch-up are free so if you have the time, give them a try.

Brand names, organizations, suppliers and manufacturers are mentioned in these articles only to provide examples for illustration and discussion and do not constitute any recommendation or endorsement. ■

Bristol Stickney has been designing, manufacturing, repairing and installing solar hydronic heating systems for more than 30 years. He holds a Bachelor of Science in Mechanical Engineering and is a licensed Mechanical Contractor in New Mexico. He is the Chief Technical Officer for SolarLogic LLC in Santa Fe, N.M., and is involved in training programs for solar heating professionals. For more information visit www.solarlogicllc.com.



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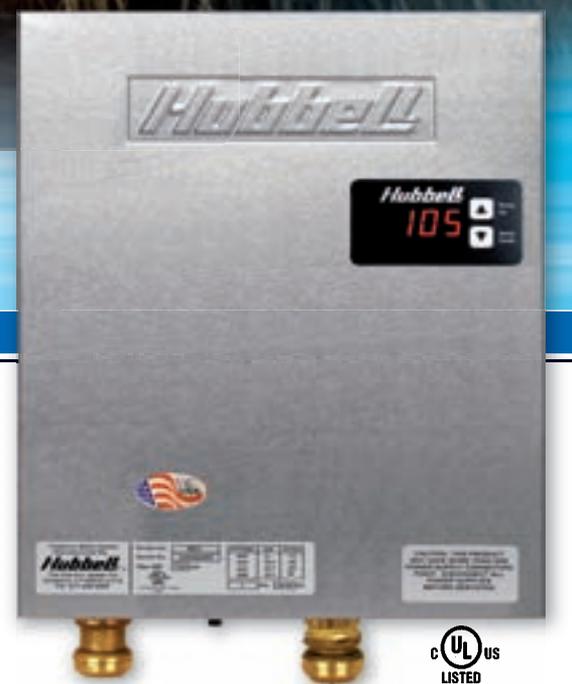
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BY ELLEN ROHR
contributing writer

The sweet spot

My husband Hot Rod and I were in business together a long time ago. Like many other contractors, we were seduced by the “BIG Job.” A “BIG Job” is one that:

- Has lots of dollars in the bid; and
- Has lots of hours built in — to keep the team busy for a long time.

Once we got a handle on the financials, we started pricing ourselves out of the new construction market. The good news? We weaned ourselves from “BIG Jobs” and started making money on “Sweet Spot Jobs.”

Let’s use a dramatic example to illustrate the challenges of the “BIG Job.” Suppose you have the opportunity to bid a new job. The General Contractor alerts you that he will be supplying the materials. You may find that a relief. “Oh, good; I don’t have to worry about that. No fussy owners to talk to. No ordering the wrong thing. And the “BIG Job” will keep the crew occupied for a while.”

Now, let’s assume (this may be a big assumption) that you have done some numbers crunching and have a handle on your selling prices. Let’s assume that Frank Blau dressed you down once upon a time. He taught you a basic break-even formula:

- Add all your costs of doing business, including great wages for your team and a decent salary for yourself.
- Divide the total costs by the total estimated number of billable hours you can generate. That gives you a breakeven per billable hour.
- Then, inflate that number for your desired profit percentage. That’s your selling price per billable hour.

Easy peasey. If you have done this exercise, you will probably come up with a selling price that is 3-10 times the going rate for labor in your market. Note what happens when you put a bid together for this “BIG Job.” For our example:

- The yellow cells are how you price. This is the classic “Frank Blau” method. Selling price for labor is \$300 per hour. \$300 time 200 hours is \$60,000. That’s the selling price for the “BIG Job.”
- The green cells represent a typical pricing strategy — \$50 per labor hour:

The only way you are going to get this “BIG Job” is to cut your price. You could put in less hours or your could drop your selling price per hour. Or, you could say, “No, thanks,” and not even submit a bid. On this type of job

— low ratio of materials to labor required — your price is always going to be a lot higher than the contractor charging the “going rate” for labor:

Let’s look at a job that has a high ratio of materials to labor required. In this scenario:

- The yellow cells calculate a selling price by multiplying \$300 times 10 labor hours. And materials are inflated to create a 20% gross margin.
- The green cells show a price derived by using \$50 per labor hour and increasing the materials for a 50% gross margin (doubling the materials.) It’s a standard approach in our industry.

Well, well, well. You are the low bidder in this scenario. You could get this job. Submit the bid. I love high materials to low labor required jobs! Sell really nice materials and focus on remodeling, replacements and repairs. Put together fantastic systems combining solar, hydronics, hvac and lovely plumbing fixtures. Offer the good stuff... but keep the overall scope of the job modest. Even if you blow the bid, you could recover from this job. If you blow a bid with hundreds of hours in it by even 10%, it could jeopardize your company.

Even if your competitor chickens out and lowers the margin on materials, look at the results:

(Turn to Big jobs vs. sweet jobs, page 28.)

- Seduced by the ‘BIG Job’
- Basic break-even formula
- High materials/labor ratio = Sweet Spot Job
- The ‘Crack Cocaine of Contracting’
- Disciplined financials, realistic charges

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Big jobs vs. sweet jobs

(Continued from page 26.)

In this example, I dropped the gross margin to 25% on materials. You will be slightly higher priced, yet if you have basic sales skills and good operating systems (show up clean, sober and on time for starters) you can still get this sale. Submit the bid, in person, and take home the check.

A high materials to low labor hours required job is a "Sweet Spot Job."

When you have a selling price that covers all your costs, you don't have to inflate the materials to cover overhead. You can just inflate your materials costs to generate profit. Materials are gravy! And, they can help you leverage every hour you sell.

In the "BIG Job" scenario, even if you did get that job, there are no materials in it. You will spend 200 billable hours (if all goes well) and miss the opportunity to generate any additional sales dollars per hour. In the

"Sweet Spot Job" for every hour of labor you sell, you are generating profit dollars from material margin.

Within the total bid, you have a selling price for the materials of \$12,500. Less the cost of the materials, you generate \$2,500 in gross profit...or \$250 per billable hour. I love, love, love "Sweet Spot Jobs"!

The "Crack Cocaine of Contracting"

Here's another problem with the "BIG Job." When you get one of these, you will keep the team busy for a week or two. Then, between the sub-rough and the rough, and the rough and finish, there are weeks of waiting. So, you take another "hit." Because you have a lot of team members now, and you have got to keep them working, you take another "BIG Job." There is an initial rush. Ahhhh. The selling price of the job

seems so big and looks like the money will be more than enough to cover all expenses. You start leap-frogging the production. Hey, it could work! You seem to work better when you are busy. Sure, you run into some snags. You realize you forgot to include hours in your bid for the stuff that happens that you couldn't anticipate. Then, you sweat as you extend your line of credit to cover payroll while waiting, sometimes for months, sometimes forever, for the last retention payment to come through. And you take another, "hit."

You get to do what you want to do

Don't let me or anyone else tell you what to do. I am just sharing my experience — and prejudice — with you. Do you love new construction work? Great! I wish you the best. Be disciplined about the financials and make sure you are charging more than it costs. Be obsessive about good bidding and production sys-

tems. I hope you do really well at it.

However, it may be that this article is validating what you have already discovered: That "BIG Jobs" don't work for you. So be it. I encourage you to discover your "Sweet Spot Jobs" and expand that area of your business. You could work less, enjoy life more, make more money and assume less risk.

Sweet.

NOTE: This cool spreadsheet will help you find your "Sweet Spot." Want one? Go to www.barebonesbiz.com, click on the "Contact Us" page and ask for one! We'll email one to you for free. ■

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GAS CONNECTORS

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BY RICHARD P. DiTOMA,
contributing writer

A tale of two contractors

Charles Dickens wrote of the best of times and the worst of times in his classic novel “A Tale of Two Cities.” I think you would agree that the economic climate you are currently experiencing is most definitely the worst of times.

Business exists for one reason only. That is to make a profit. Profit is best described as that money which remains after all your bills, including your salary, have been paid. In these times profit may seem like a distant pipe dream. Using incorrect numbers and procedures will always hinder your ability to make a profit in good times or bad.

Realizing that wrong numbers cause problems during good times may not be as easily recognizable as it is during bad times. This is due to the fact that when money is constantly coming into your business during those “good times” (in your perception), your potential for a profit or loss is camouflaged by the hyper activity of addressing all those consumer requests and performing their related services.

When the bad times cast the shadow of financial doom on your business operation, you will definitely feel the pinch as your stress and frustration levels climb to heights above that which any human should have to tolerate. But, contractors also should consider the use of proper numbers even during the good times because moving money during good times is not the same thing as making money.

The problems you face in your geographic area are not unique to your area. They are pervasive throughout the industry. And, those problems are caused by your use of wrong numbers which keep you from earning the reward you deserve for your labors and financial investment in your business.

Ron and Ed are fictitious names of real contractors. Ron is a plumbing and heating contractor from the north-east quadrant of the USA. Ed is a plumbing contractor from the southeast section of our great nation. Both of their businesses were suffering from “wrong number disease.” Due to their intelligence, they were able to realize they had problems within their respective businesses. Their courage gave them the ability to set aside their egos and seek my coaching assistance.

I showed them how to identify and calculate their true cost of operation; choose a proper profit margin; blend those two pieces of information into properly profitable selling prices; and set up sound business protocols. One of those protocols was to charge a minimum service call fee to cover the costs they incur traveling to and addressing the consumer’s situation in case the customer did not wish to proceed with their service. I also suggested that the service call fee be higher than their average cost.

Then, I supplied them with customized copies of my Readily Available Pricing Information Digest© (based on their respective labor and overhead costs, profit margin, average travel cost). Armed with knowledge and this great business tool, they began their journey on the road to achievable success. I also told them to contact me along the way for direction should either of them wander off the path or come to a fork in the road.

Ron’s Tale

Ron was using the old-fashioned and flawed time & material pricing method. He was selling his hourly services below his true cost because he was trying to compete with the going broke hourly rates of his competition. Therefore, he was using wrong numbers and getting wrong results.

Since the onset of his journey on the road to achievable success Ron’s techs have accomplished the following as of this writing:

- Appointments: 125;
- Number of tasks sold: 211;
- Percentage of total appointments resulting in sold tasks: 168.8%;
- Number of tech hours spent for appointments inclusive of travel time: 198.17 hrs.;
- Total amount of revenue with my coaching, Contract Pricing and RAPID® guides: \$85,512.73;
- Total amount of revenue if he used his old T & M pricing method: \$47,404.82; and
- Extra revenue realized with change to Contract Pricing and use of my RAPID® guides: \$38,107.91.

It should be noted that Ron’s techs have faced no significant objections to their new pricing procedures. His techs are happier and his clientele is appreciative that Ron’s techs now quote prices before any service begins.

Only eight of the 125 appointments resulted in no tasks being sold. That means 93.6% of the time his techs sold at least one task. His techs are selling an average of 1.69 tasks per appointment. That’s fantastic.

The eight service calls that resulted in no task being sold cost him \$143.74 each (on average). But, Ron charges a minimum service call charge of \$149.00 to cover the cost he incurs for travel and speaking to the consumer regarding their requests.

Ron is ecstatic because his business is selling its services above cost and earning the reward it deserves. To date, he has realized an 80.39% increase in revenue with my coaching, Contract Pricing, and my price guides. That’s \$38,107.91 more than he would have for the same tasks being performed with T & M pricing.

If each of his techs takes a two week vacation and six holidays a year, each tech could get those results 8.6 times annually. At 100% of available time sold, each of Ron’s techs can bring in an extra \$327,728.00 more per year than his old and flawed time & material pricing method would allow. At 75% the extra revenue would amount to \$245,796.00 per tech. At 50% each tech could bring in an extra \$163,864.00. And, at 25% it would bring in an extra \$81,932.00.

Ed’s Tale

Ed, on the other hand, had already been using a contract pricing method (flat rate pricing to those who wish to use ambiguous terminology). His problem was the same as Ron’s problem —wrong numbers. You might wonder why it wasn’t working for him since he was already charging flat rate prices. The answer is simple. Intent, ability and quality of service and/or product differ among consultants just like it does between contractors. When a consumer uses a mediocre contractor they usually get second-rate results. When a contractor uses mediocre business consultants and flawed business tools they get substandard results.

Ed is a very good contractor. But, the numbers in his price guides (which he purchased from others) did not allow him to recover his cost let alone make a profit. After he and I calculated his correct numbers and customized the Readily Available Pricing Information Digest© I supplied to him his business results began to improve. As of this writing, his techs have accomplished the following results:

(Turn to Curing... page 32.)

- Hard economy = frustration
- Selling service above cost
- Price guides incorrect
- Won’t sell all jobs all the time
- Realistic service call fees

"My workhorse!"

Carl Helt, Helt Plumbing, Charleston, MO

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Curing 'wrong-number disease'

(Continued from page 30.)

- Appointments: 113;
- Number of tasks sold: 89;
- Percentage of total appointments resulting in sold tasks: 78.76%
- Number of tech hours spent for appointments inclusive of travel time: 207.4 hrs.;
- Total amount of revenue with my coaching and the price guides I supplied: \$53,568.86;
- Total amount of revenue if he used his other pricing guide: \$34,909.76; and
- Extra revenue realized with change to my Readily Available Pricing Information Digest©: \$18,659.10.

In order for any business to succeed, protocols must be imple-

**The measuring stick
I use is that you
should sell at least
seven to eight tasks for
every 10 appointments.**

mented properly. At the beginning of Ed's journey he hit a bump in the road. Of 10 appointments his techs only sold three tasks. This was not good. I immediately called to find out what had occurred.

I am of the strong opinion that no contractor signs up 100% of work for

the appointments made. This is due to several facts. Although the contractor incurs expenses for 100% of the appointments (that's why you should charge a minimum service call fee) there are those calls with extenuating circumstances which prohibit the selling and commencement of a task such as: the tech finds no call of action to be taken; the call only required the tightening of a packing nut to stop the leak; the consumer didn't have the money; the consumer was only window shopping; or the consumer just did not want to pay the price.

Whatever the reason you won't sell all the jobs all the time. The measuring stick I use is that you should sell at least seven to eight tasks for every 10 appointments. Hopefully, you will do better. As an aside, with contract pricing you also have the potential for selling more tasks than appointments. Just look at Ron's ratio of tasks sold to appointments. That's because you can give the consumer the price before a task starts rather than a surprise bill after a task is performed. The consumer has the luxury of deciding how much money to spend.

When Ed hit that bump in the road, we quickly addressed it and no further bumps have been encountered to date. As we get more data, Ed's task selling percentages will come closer to matching Ron's.

The amount of extra revenue

compared to Ron's is less, but, that is to be expected. Ed's operational costs are less than Ron's and Ed was already using contract pricing. Therefore, his previous numbers needed less adjustment than Ron's numbers since he was already selling closer to his cost than Ron.

Ed is doing something with which I do not agree. He is charging a service call fee of only \$49.00. His average cost incurred for travel and introduction time for 36 appointments, which did not result in a task being sold is \$101.86. Fear is a very powerful trait. He's afraid that if he raises his service call fee the number of appointments he makes will drop. To alleviate this fear we are monitoring his appointment ratio. My thought is that the consumer who wouldn't pay for the costs he incurs traveling to them wouldn't pay him for the costs he incurs to serve them.

Since he has made the decision to charge a service call fee, which is \$52.86 less than his average service call visit costs him, he has lost \$1,903.11 on those 36 visits. That means his extra revenue should be at least \$20,562.21 instead of \$18,659.10. That's another example of wrong numbers and protocols rendering wrong results. Hopefully, he will soon see the error of his ways and revise his service call charge.

But, even with that mistake on his part that \$18,659.10 could be attained 8.24 times per tech per year at 100% of available hours sold. That's an annual potential extra cash amount of \$153,750.98 per tech. At

75% of available hours sold, it's \$115,313.23. At 50%, it's \$76,875.49. And, at only 25% sold, he could have \$38,437.75 extra per tech annually.

I hope this tale of two contractors inspires you. The contractors I have coached who have understood and properly implemented what I have shown them have improved their businesses. They can afford to deliver excellence to their clientele while attaining their goals. Obviously, both Ron and Ed are very happy with the results they are now getting. And, I am continuing to assist them so they can do even better.

I enjoy helping them and I'm sure they are enjoying the results they are getting. Even in the worst of times things can be better. If you would like to avail yourself of my coaching skills and have an opportunity to improve your business results, please call me at 845-639-5050. I wish you good health and much prosperity. ■

Richard P. DiToma is a business consultant and contractor with 36 years of experience in the PHC industry. He conducts seminars, evaluates business operations, publishes customized price guides for contractors and offers continuing support.

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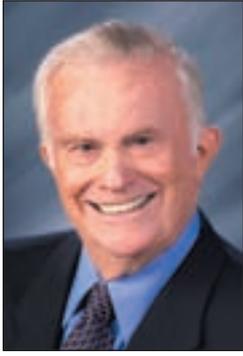
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BY MORRIS BESCHLOSS
PVF & economic analyst emeritus

U.S. demand economy provides limited upward dynamic

Although many U.S. economic analysts applauded the preliminary upward (3.2%) direction of the first quarter gross domestic product, there was little vigor foretelling an expansion of previous recoveries.

In nearly every one of the post-recession springboards following the end of World War II, the U.S. economy had exhibited renewed vitality, sparked by the optimism of reaching ever greater heights than what had brought on the preceding let-down.

What makes the current pattern different is that businesses, large and small, and average consumers are taking a defensive outlook when anticipating the months, and even years ahead. This almost unanimous approach is the result of deep concern for the future of America's economy and the way of life in all sectors comprising the U.S.'s world-leading position.

It is immensely complicated by what is considered the current government's "distribution of wealth" direction, as proven by the ponderous healthcare program, massive new taxes on the horizon, and what is perceived by many to be a curbing of this nation's entrepreneurial exceptionalism.

This has come through loud and clear in scores of conversations with manufacturers, distributors, retailers, and contractors. In practically every case, owners, CEOs and general managers have alluded to their repositioning for a demand economy — that means maintaining inventory and service levels perceived as fulfilling the immediate needs called for by the next stage in the consumption chain.

A major victim of this comprehensive business outlook is the unemployed worker potential that is weighing heavily on the contemporary recovery.

Conversely, the zest for technological advancement to make a particular workplace more productive has never been so apparent in business and industry — whether on the shop floor or the back office.

The main bright spot that is beginning to appear on the future horizon is exports. With the world's major developing nations — China, India, Brazil, Indonesia, Taiwan, South Korea, etc.— expanding exponentially, "Made in America" goods are destined to reach the leading rung in global trade in the foreseeable future.

The U.S. combination of brand name identity, technological quality, and ready availability are not matched by either Japan, China, or Germany, America's main export competitors.

Small businesses/corporate giants face widening gap

Although much of the current business optimism is generated by the large publicly-held corporations, especially the high-flying technology companies, small business owners continue to be downbeat as to the opportunities inherent in the rest of 2010.

According to a monthly survey of members comprising the National Federation of Independent Businesses, the optimism index, ranging from profit outlook to job openings remains where it has been for the past 18 months — low levels that approximate those that hadn't been seen since 1980.

This is in stark contrast to the more ebullient surveys, generated by the large corporations' Business Roundtable and the Conference Board. They display a sharp rebound

from the low point in confidence generated in March 2009. These top executives have emanated increasing hope for improvement during the last two quarters.

A major reason for this disparity is the benefits derived by large corporations from the global recovery, especially in the robust developing nations' economies. They are also less prone to credit restrictions imposed on privately-owned companies, which are still suffering from the restricted lending practices available from small and mid-sized banks.

Many of these financial institutions hold substantial commercial development loans, which make them wary about taking on additional credit risks.

Although much of the current business optimism is generated by the large publicly-held corporations, especially the high-flying technology companies, small business owners continue to be downbeat as to the opportunities inherent in the rest of 2010.

Since 65% of the nation's employment depends on the fortunes of thousands of small businesses, it follows that the current depressing jobs outlook does not look promising in the months to come.

However, with the improving nature of the demand economy at the producer and consumer levels, the second half of 2010 looks to improve on today's fragile confidence levels.

Hotel occupancy nears pre-recession levels

At first glance, the ailing hotel business seems to have rebounded magnificently, as demand for rooms has jumped almost 9% from the dreary lows of March 2009. Unquestionably, the return of business travel, tourism and the value of overseas currencies, such as the Canadian dollar, have played a major role in resuscitating the disastrous hospitality level of most of last year. But this reversal is not all it's cracked up to be.

Even in the darkest days of the two-year long recession, the supply of hotel rooms continued to expand, since the overly ambitious groundwork had already been laid in earlier years to accommodate an expansion that was anticipated to manifest itself indefinitely.

This has resulted in a vacancy rate of 42.1% in March 2009, as opposed to 34.5% before the U.S. economy had hit its all time high in 2007.

Although investment in the hostelry sector has slowed precipitously of late, it's doubtful whether the absorption of available rooms will substantially lower the vacancy rates in the months to come. Hotels are one sector of the commercial developments that are likely to suffer the pangs of the great recession for some time to come, due to developments in progress.

Still open to question is whether American tourism will be turning inward hard enough to join with overseas tourists to patronize the many fabulous U.S. tourist spots; and heighten domestic hotel utilization in the U.S. to fill up the many excess rooms now available.

Productivity becomes hallmark of U.S. business and industry

As the U.S. economy extricates itself from the entan-
(Turn to U.S. Productivity... page 36.)

- CEOs repositioning for demand economy
- Small businesses not as optimistic as big corporations
- Hospitality industry overbuilt
- Productivity driving technological advances
- Higher-tech jobs go begging
- Estate tax questions still unanswered

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U.S. productivity a double-edged sword as job growth slow to recover

(Continued from page 34.)

gments of the “Great Recession,” productivity is becoming an increasingly valuable by-product of the current recovery. This is particularly significant since such a continuing trend will strengthen the continuity and profitability of thousands of businesses that were committed to growth at any price before the cold shock of financial collapse threatened in the late summer of 2008.

This evolution bodes well for the re-emergence of America’s industrial base and the effectiveness of a strengthened service sector. With lower cost per unit, America’s fast-growing export sector will be greatly enhanced. Together with highly recognized brand name identity and well-deserved quality standards, both foreign and domestic buyers will be increasingly attracted to “Buy American.”

But, as in every major evolution, there are winners and losers. Those benefiting mightily are the providers of technology for the back office, as well as the shop floor. This has gotten the tech manufacturers off to a jump start this year. On the other hand, the hundreds of thousands of jobs that normally accompanied even a moderate recovery are the scarcest they have ever been at this stage of an economic comeback.

However, the two-million-plus jobs for those personnel with technological expertise are going begging for lack of accomplished applicants.

To even keep up with the necessary absorption utilization of the current employment level, at least 150,000 jobs openings are needed. At the present economic momentum, slowed by the shrinkage of construction and automotive manufacturing, etc., it’s unlikely that the percentage of unemployed will decline appreciably before the November mid-term elections.

2011 estate planning taxes remain up in the air

As the legislative year 2010 winds its way through Congress’ tortuous confrontations, what

has been glaringly conspicuous by its absence has been the final determination of tax rules affecting the tax liabilities of the deceased’s estates.

As part of the “Bush tax cuts” earlier in this decade, the “death tax” liabilities were progressively lowered from an exclusion of \$1 million per estate to the point where no federal tax liabilities were owed to the Internal Revenue Service throughout 2010. As things now stand, however, such estate tax responsibilities will rebound to the original \$1 million exclusion and a 45% tax residue for the remainder of the estate after all other obligations of the deceased, such as mortgages, outstanding loans, charitable legacy contributions, and other aspects of the deceased’s will and testament have been met.

The exclusion would also revert back to the \$1 million mark, unless Congress acts to make meaningful changes before the end of the year.

Some such changes have already been bandied about. It will likely result in a tug-of-war between the stingy \$1 million exclusion and the top level of \$3.5 million. With heavy tax burdens looming, and ever increasing federal debts mounting, it’s likely that resistance to the higher figure will increase. The major argument against the confiscatory taxing that could be called for is the fixed small business assets such as farms and “cottage businesses,” which could be decimated by the heavy estate tax burden that many estates might be saddled with. Beneficiaries would likely be then forced to sell to meet the tax bills.

As in all cases affecting the public-at-large, it’s important that your specific legislators be heard from, especially before the upcoming mid-term elections, occurring the first Tuesday in November. Before that time, be sure both senators and congressmen are made aware of your concerns.

Death and taxes are 100% sure to affect everyone sooner or later. Make sure that your strong opinions are registered with those responsible in implementing your wishes. ■

ABC says more federal red tape would hurt small business growth

WASHINGTON — Associated Builders and Contractors (ABC) expressed concern over the creation of the Bureau of Consumer Financial Protection (CFPB), that is included in the Restoring American Financial Stability Act of 2010 (S.3217). The CFPB would add a new layer of federal bureaucracy to small business lending by establishing additional paperwork and record-keeping requirements.

“We do not need more red tape and more federal government regulations,” said 2010 ABC National Chairman Jim Elmer, founder and president of James W. Elmer Construction Co., Spokane, Wash. “The majority of U.S. construction firms are small businesses that need unhampered access to capital to fund construction projects and create jobs.

“In order to jump start the lagging economy and put the men and women of the construction industry back to work, ABC calls on Congress and the ad-

ministration to focus on free-enterprise initiatives and open competition instead of creating yet another new federal government agency,” said Elmer. “With unemployment in the construction industry at nearly 25 percent, creating jobs should be their number one priority.”

In a letter to members of the U.S. Senate, ABC stated that “The construction industry has suffered the most acute impacts of the economic downturn, and access to capital, or the lack thereof, is a major and continuing factor in our industry’s struggles.”

According to the U.S. Small Business Administration, nearly 90 percent of the nation’s 26 million small businesses use some form of credit for operating costs and expansion. However, many small business construction contractors cannot get traditional bank loans because they may not have a credit history and are forced to rely on securing home equity loans, personal loans, auto title loans and credit cards to obtain credit.

For more info, www.abc.org.

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Prices recovering but industry worries about upward pressure on raw materials

Stainless Steel Pipe

Pricing ↑ Stainless steel pipe manufacturers indicate pricing increase of 8% - 10% for 2nd quarter 2010.

Lead Times: Deliveries are running 6 - 8 weeks. Fill rates are running 30% - 50%.

Comments: Stainless steel values are rising in most markets around the world. Producers and distributors hope this is a chance to see an increase in business. Nickel on the LME has risen over the past few

nickel prices.

Lead Times: Deliveries are running 2 - 4 weeks for commodity material and large OD fittings out 4 - 6 weeks. Fill rates are forecast for 50% - 70%.

Comments: The Dow Jones reports 3-month Nickel ended the day and week at \$11.42/lb still residing within its bullish trend. The price jumped by \$1,000 per ton in one day 04/07/10. Three-month nickel ended 2009 at \$8.41/lb and is now trading 35% higher.

90% with deliveries of 8 - 12 weeks for commodity material.

Comments: One manufacturer indicates that OCTG is causing mills to book up. In the U.S., scrap prices have risen steadily since mid-November, with the increases driven by seasonal supply constraints and strong exports to scrap-short, developing markets. Spring weather should help improve supply, scrap prices may stay high from fiscal contract-year increases in iron ore prices, strong demand from the export

	Mar 09	Apr 09	May 09	Jun 09	Jul 09	Aug 09	Sep 09	Oct 09	Nov 09	Dec 09	Jan 10	Feb 10	Mar 10
US\$/ton	2107	1998	2040	2223	2428	2760	2945	3320	3214	3290	3115	3175	3405
Index	101.3	96.1	98.1	106.9	116.7	132.7	141.6	159.6	154.6	158.2	149.8	152.7	163.7

North America Index, 1997=100 as furnished by MEPS International

months. Scrap containing nickel and chromium is in short supply. Demand from developing markets, particularly in Asia, continues to increase. Other factors supporting the current escalation in stainless: (1) Mills have had a number of increased input costs on the supply side. (2) Producers have been selling at or below break-even levels for some time and are now trying to ensure decent margins. (3) On the demand side, most supply chain participants need to replenish depleted inventories, while distributors and end-users may attempt to place orders in advance of anticipated further hikes.

One manufacturer comments that the price increase is driven almost entirely by speculators with no relationship to supply and demand. They do add there is a slight uptick in consumption, but still not seeing large projects. The lack of project work continues to dampen any enthusiasm for an improving economy at this time. Also, the lack of a clear-cut national energy policy has stalled countless projects from starting.

According to manufacturers, stainless steel pipe will certainly increase on a month-to-month basis by the impact of rising monthly surcharges at a minimum. Tightening supply with relatively healthy demand levels may service to increase pricing up and above the impact of surcharges.

Stainless Steel Weld Fittings & Hi-Pressure Fittings and Stainless Steel Flanges

Pricing ↑ Manufacturers indicate prices to increase by 8% - 10% with a leading factor being increased

The Nickel LME monthly average cash price increased nearly 22% from January thru March (\$18,349/metric ton to \$22,461/metric ton). The April month to date average is \$24,845/metric ton which is a robust 10.6% over March's average. With respect to Molybdenum, monthly mean molybdenum oxide pricing has increased 24.46% from January thru March after a relatively stable fourth quarter of 2009. This surge in moly has translated in to 316 welded stainless steel pricing increasing at a higher rate percentage wise than 304 during the first quarter time period. Supply and demand dynamics continue to be the most impactful issue affecting stainless steel PVF products. Manufacturers expect that demand will remain relatively healthy into and through the second half of the year and noted economists expect that the US GDP will be at a higher level in the second half versus the first half of 2010. The likelihood for any major correction therefore is small.

Manufacturers are observing far less indent activity than in years past, which is a reflection that the traditional savings for placing indent requirements is currently not attainable versus pricing available out of manufacturer/distributor inventories.

Carbon Steel Pipe – Seamless, ERW & Continuous Weld

Pricing ↑ Carbon steel manufacturers indicate price increasing from 8% - 10% thru the 2nd quarter. The price of scrap is at 470 ton forecast to 700 ton. Prices increase by 350 ton with little demand.

Lead Times: Fill rates are running

port market and increased scrap purchases by integrated steelmakers — which have restarted production in hopes of improved second-half demand.

Carbon Steel Weld Fittings and Flanges

Pricing ↑ Carbon steel weld fittings and flanges are forecast for an increase of 5% - 8% thru March 2010 due to raw material costs.

Lead Times: Deliveries are scheduled for 6 - 8 weeks and as much as 8 - 12 weeks for commodity material with fill rates of 80% - 90%.

Comments: Manufacturers indicate business is starting to pick up especially in the energy market (oil-field); however, construction starts are still down. More imports are being accepted.

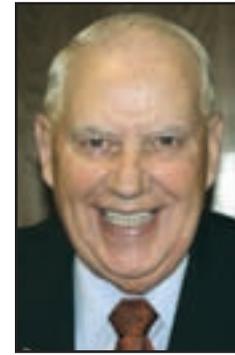
Forged Steel Fittings

Pricing → Manufacturers indicate no pricing change on forged steel during the second quarter of 2010.

Lead Times: Lead times are running 2 - 3 weeks with fill rates of 85% - 90%.

Comments: One manufacturer comments that the forged steel industry is predicted to run at approximate 75% - 80% capacity through the second quarter. During the second and third quarter of 2009, the import presence decreased. The deflation of the domestic product resulted in domestic companies seeing share increases. The number of import forged steel “private labelers” continues to increase. Import inventories and availability of product at these outlets continues to outpace demand in the US. This condition increases competition and the use of price as a marketing tool for import, non-approved product.

Special bar quality (SBQ) steel is



BY GARY CARTRIGHT,
PVF analyst

the raw material utilized in forged steel production. The SBQ market has experienced a slight demand uptick complied with historically low inventories and extremely high scrap prices, consequently a \$30-per-ton increase is effective May 1st. These ensuing factors have pushed SBQ steel price up 40% - 43% since January. Product price increases will follow.

One negative factor facing our industry, according to comments from a manufacturer, is the uncertain direction of our current government administration. Many refining companies have delayed work until “cap and trade” legislation is determined. Others have slowed upstream products until the time a comprehensive energy policy is determined. The news of potential offshore drilling is welcomed, but coincided with the reduction of available leases in Alaska and the “rolling back” of previous Bush Administration outer continental shelf leases. These actions send mixed messages to the energy community, and reduce capital investment for new products until “firm” policy directions are agreed upon.

Stainless Steel Gates, Globes, and Check Valves

Pricing → No price change for stainless steel gate, globe and check valves forecast for the second quarter 2010.

Lead Times: Deliveries are forecast for 6 - 8 weeks with fill rates of 70% - 80% for commodity material.

Comments: One manufacturer notes that raw material costs are increasing slightly, but they anticipate costs to stabilize through 2010. Overall there is still a lot of high-priced inventory of commodity product in the USA stock. One manufacturer see very strong growth opportunities beginning in 2010 through 2015.

Bronze and Iron Gates, Globes and Check Valves

Pricing ↑ → Bronze valves are (Turn to PVF Report, page 40.)



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Circle 29 on Reader Reply Card

Steel market update

Final findings by the U.S. Department of Commerce in the antidumping case against Chinese OCTG have been issued with margins of 30-99%. In the final phase of its investigation, the Department found that the Chinese respondent's preliminary margin was based on fraudulent documents. As a result, the DOC assigned the respondent an "adverse" final dumping margin of 99%. Alan Price, head of international trade practice at the Washington law firm of Wiley Rein and counsel to Maverick Tube remarked that the determination sends a clear signal that manipulation of documents is not tolerated and confirms the substantial dumping by the Chinese producers. In addition to Maverick, the case was brought by U.S. OCTG producers US Steel, V&M Star, V&M Tubular, TMK Ipsco,

Evraz Rocky Mountain Steel and Wheatland Tube. The DOC also determined that Chinese OCTG producers also received illegal subsidies in the amount of 10-16% of the product's value.

The U.S. Department of Commerce in the Thailand antidumping duty case also determined a preliminary AD margin of 4.35% imposed on imports of welded carbon steel pipe and tube from Saha Thai. The duties paid on standard pipe imports from other Thai companies remain individually at: Pacific Pipe Public, 5.14%; Thai Steel, 15.8%; Siam Steel & Thai Hong, 29.89%; and Thai Union, 37.55%. The all others rate continues to be 15.67%. This administrative review is being conducted at the request of American tubemakers Allied Tube and Conduit and Wheat-

land Tube.

U.S. scrap metal prices are moving upward \$30 - \$50 ton April over March 2010 and have been growing for six months in a row. James Coulas in the Weldbend News said,

The Allegheny Distributor Surcharges for US 304 /316 Stainless Steel are as follows:

	5/09	6/09	7/09	8/09	9/09	10/09	11/09	12/09	01/10	2/10	3/10	4/10	5/10
304	.44	.49	.62	.76	.87	1.10	1.10	1.03	.93	.96	1.09	1.19	1.44
316	.62	.62	.78	.97	1.21	1.60	1.60	1.37	1.23	1.27	1.50	1.64	1.94

"Scrap metal is the a driving force in the welding fitting and flange market because of the percentage of steel used. Scrap is a large component in the production of seamless pipe and used almost 100% in the production of steel for flanges. If steel prices increase another \$50 a ton for April, we will be flirting within approximately \$200 a ton of the all-time high for billet since the very high-priced and turbulent times of August 2008, and only \$155 for scrap in May of 2008."

Coulas also noted that iron ore, a key ingredient in steel production, is being sold by the largest mining company at market prices. He goes on to say that this move will translate into higher costs and could bring

counts for two-thirds of the global nickel demand. A series of strikes, project delays and production problems are expected to send the market for nickel into deficit in 2010, the first time in four years. LME

nickel inventories hit a record high above 166,000 tons in early February; but since then they have dropped around 6% to their lowest since late 2009.

Nickel mines have been plagued with United Steel Workers on strike at Vale Inco in Ontario, Canada and collective bargaining agreements at Xstrata in Switzerland. Nickel consumption has reported a 5.5% increase January over December and a 39% increase over consumption of January 2009. The AMM reports that demand for nickel has increased and several suppliers have asked for accelerated availability for their April shipments.

Ed Scott, editor of the ASA Materials Market Digest, reported on

Steel Business Briefing reports the following steel price trends:			
N. American Domestic	1st Quarter 2010	2nd Quarter 2010	Change %
Welded Pipe ERW (4")	\$916 - \$995 / ton	\$992 - \$1047 / ton	+ 6.7%
Welded Pipe OCTG ERW (4 1/2 - 8")	\$1268 - \$1364 / ton	\$1433 - \$1543 / ton	+ 13.1%
N. American Import			
Welded Pipe ERW (4")	\$886 - \$910 / ton	\$909 - \$937 / ton	+ 2.8%
Welded Pipe OCTG ERW (4 1/2 - 8")	\$1101 - \$1185 / ton	\$1323 - \$1488 / ton	+ 23.0%
<i>The values noted in the chart above are price indicators for orders placed.</i>			

PVF Report

(Continued from page 38.)

forecast to increase 5% - 8% during the second quarter due to raw material costs. Raw material costs of bronze ingot have increased greatly and expected to continue to increase through 2010. Iron valve pricing is forecast to remain stable.

Lead Times: Valve deliveries are forecast for 4 - 8 weeks for commodity material, and fill rates are running 70% - 80% on both bronze and iron valves.

Comments: Manufacturers indicate that overall demand for bronze and iron valves are up 25% versus 2009. Pulp and Paper business is stable. Chemical plant opportunities are increasing. Export business is strong, but mechanical construction continues to remain at lower levels. They see MRO activity at high levels.

Cast Steel Gates, Globe and Check Valves

Pricing → Cast steel manufacturers do not anticipate price changes thru the second quarter.

Lead Times: Fill rates remain at 80% - 90% with forecast lead time of 4 - 8 weeks.

Comments: Raw material costs have increased slightly. Inventories on the ground remain at high levels in the US.

Forged Steel Gates, Globe and Check Valves

Pricing ↑ Forged steel valves are increasing 3% - 5% this quarter according to manufacturers.

Lead Times: Delivery lead times are 6 - 8 weeks with fill rates of 60% - 70%. Non-stock specials are shipping in 12 - 20 weeks.

Comments: Forged steel manufacturing plants around the world have scaled back capacity by 10% - 20% compared with 2009 production levels.

Quarter Turn Valves – Ball and Wafer

Pricing → Quarter turn ball and wafer manufacturers indicate that pricing should be holding steady.

Lead Times: Deliveries are running 8 - 12 weeks. Fill rates are 50% - 60%. Non-stock specials are forecast for 8 - 12 weeks.

Comments: Primary concerns for manufacturers are raw material costs and a surge in demand. It appears that projects are starting to creep back in. Foreign supplier pressure is affecting pricing, especially from those stranded with lots of inventory. The biggest challenge in our industry is a declining industrial infrastructure. The shift in production from major chemical and petro-chemical producers to plants outside of North America is a major concern. ■

RAW MATERIAL UPDATE									
The following chart reflects raw material prices for the period April 09 thru March 2010:									
Raw Material	09/09	10/09	11/09	12/09	01/10	02/10	03/10	% Change April 09	% Change Feb 10
Scrap Shredded /ton	282.67	273.14	246.84	275.24	329.28	345.53	388.48	126%	12%
Scrap #1 Busheling /ton	336.43	317.14	274.47	333.10	370.99	398.95	460.87	157%	16%
Copper per/hundred lb	281.48	287.86	303.53	318.48	333.77	311.92	339.54	66%	9%
Nickel per hundred lb	848.84	902.37	844.04	841.74	918.51	949.22	1,111.45	106%	17%
Stainless 304 / hundred lb	141.81	158.00	151.26	152.71	143.68	145.37	156.04	48%	7%
Stainless 316 / hundred lb	175.02	205.50	190.76	187.10	175.63	178.79	197.76	65%	11%
Crude Oil per barrel	69.28	70.10	74.70	70.94	75.10	72.32	77.34	74%	7%

violent price swings for steel makers. Also noted in the newsletter is an announced \$200-a-ton increase in seamless pipe from a Japanese company effective April 1st, and he expects mills in the U.S. to follow in the next few months.

The World Steel Association report for February 2010 estimated total crude steel production for the 66 countries reporting to be 107.5 million tons, an increase of 24% on February 2009. The total for the two months to date was nearly 28% up on the same period in 2009 at 221 million tons. However, excluding China, global crude steel production rose by almost 30% in the two months. All regions showed an increase in both the month and year to date with the largest regional increase being in North America, up 44% over the first two months of 2009.

The price of Nickel reached a 23-month high at \$24,750 a ton (\$11.74 /lb). Nickel is a key ingredient of stainless steelmaking and ac-

ThyssenKrupp in the April newsletter saying, "If all goes well for ThyssenKrupp, the Stainless Steel 'Big Three' – Allegheny Ludlum, North American Stainless and AK Steel – will become the Big Four. The company reports that ThyssenKrupp's completion of its steelmaking and melt shop will reach completion as early as 2013 according to a company spokesman." The plant in Calvert, Alabama will start production with cold-rolling mills, hot-and-cold rolling mills, pickling lines, and other processes. ■

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Current PVF trends

Lots of change to little effect?

Welcome. This “Current PVF Trends” examines the commodities market as it effects the mechanical construction business. I hope this brief look will help you decide to shave a little to get the job or save a little for inflation.

Before I go any further, the editor tells me it’s good practice to put in this disclaimer: “*Beware, this report is based on facts, rumors, and opinions from a variety of people I see or talk to every day.*” No promises, just a current trend as I see it.

Two months into the second quarter, what has changed? Well, nothing, really, but then a lot. Copper tube has gone up and come down. Steel pipe vendors have sent us numerous price increase notices, but I have only seen small increases in sprinkler pipe. Valve and fittings manufacturers have all posted increases, and even recently, ironically, as I was reading a notice about hanger and strut increases, I got a phone call from a local vendor offering threaded rod at a number I haven’t seen in years; but until we get a real job to buy out, I never really know if the increase is for real, or just on paper. The one thing I do know is I haven’t seen pricing this low in quite a while — it is an ideal time to buy.

Copper

I have watched the copper Comex go from a low of \$2.83 up to \$3.60 and then back down to \$3.07. You read reports from all of these financial experts about China’s expansion slowing or the debt in Europe is out of control and the copper market falls (that’s good for us). However, a few days later the experts on the other side of the coin offer their opinions that even a slow expansion will use more copper than the mines can produce, or some major bank is going to bail out some country I have never heard of and, lo and behold, the market heads for the sky.

I think this is a game just to amuse us. I believe a hard commodity is judged by supply and demand, and let’s face it, there’s more supply than demand in today’s market.

Steel

Steel is finally catching up to copper; for awhile it seemed to maintain its level of pricing while copper was going in the other direction. I think the supply houses were just caught with excess inventory, and right now steel seems to be a bargain. Every-

day I get notices announcing price increases; however, I fail to see it reflected in our pricing. Once again it is the supply house inventory and the small demand that is keeping it low. Beware — that is all about to change.

Stainless

Lucky me, I bought a stainless job this quarter. The market seems fairly depressed; in fact, the pricing hasn’t changed much in the last year or so. Stainless pipe is always priced with surcharges, and they currently seem to be on the low side. This, coupled with the fact that I still haven’t heard anything of an increase in the cost of our no-hub clamps, makes me believe the recurring theme of supply.

Cast iron

At the beginning of the year the cast iron people put in new list pricing

but adjusted the discounts to reflect no big change; but this quarter they changed the multipliers.

Historically, the cast iron industry has risen its list price at the beginning of the year. The current price has been too stable for this to continue and most likely will increase.

Flat steel

While reading price increase notices I am getting offers I can’t believe. Talk about a market in confusion! Don’t worry, when the dust settles, it will all be heading north.

In retrospect, the one recurring theme is supply and demand. We seem to have too much of one, and little of the other. The supply houses have done a good job holding back from the recent rash of manufacturer increases. However, we are busy bidding work, and we finally have some-



BY MARK PERRONE

thing that was lacking — it’s called a backlog.

Things are changing for the better. The suppliers that have been living off their inventories to survive the economic downturn will soon have to replenish their shelves; thus the equation switches from supply to demand. This could be the last quarter for bargains. ■

For nearly 30 years Mark Perrone has been the material/purchasing manager for J.C. Cannistraro LLC, one of New England’s largest plumbing/HVAC/fire protection contractors.

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Circle 30 on Reader Reply Card

Based upon the success of last month's boiler report, *Phc News* offers its 2010 tankless report, featuring the latest news, trends and technologies from the major players in tankless manufacturing.

Phc News asked manufacturers the history of their company, what's new with the company,

thoughts regarding the economy, green building participation, contractor frequently asked questions and new product lines.

Here is a compilation of companies interviewed. They appear in alphabetical order.

Phc News would like to thank the manufacturers that participated in this report.

American Hometec, Inc.
3411 Silverside Road -Hanby Building
Wilmington, DE 19810
877-NO-COILS
www.AmericanHometec.com

Company profile: American Hometec, Inc. designs, manufactures and sells tankless water heaters utilizing breakthrough, patented technologies. The company's high efficiency Coilless Technology® water heaters provide unlimited hot water with no lime scaling buildup, no required maintenance and adjustable power consumption. The products offer numerous unique advantages for both commercial and residential applications. In addition to being the innovator of Coilless Technology® for electric tankless, American Hometec is the first company to offer H2O Saver Technology™, which enables water conservation with gas tankless.

What's new: In January, American Hometec introduced its AHQ-C10 electric tankless water heater unit, which is designed for low flow multi-lavatory and single use applications. Now, the company is getting ready to introduce its Model AHQ-T16 that meets all hot water demands of an average bathroom since it provides the versatility to heat a sink and shower simultaneously. The T16 is suited for both residential and commercial applications. In addition, the T16 unit is modern looking and compact in size for point-of-use installation, which enables water conservation. With a sleek design and modern blue LED smooth touch® temperature control panel, the unit offers an easy-clean surface that is unsusceptible to dirt or moisture.

On the economy: "Contractors know that during this questionable economy, they need to differentiate their business and offerings; tankless is a hot topic right now as many consumers are demanding green and energy efficient products," said Dave Millilo, vice president of marketing for American Hometec.

On going green: American Hometec's C10 unit comes with three capacity settings in one unit, which allows for adjustable power consumption and energy saving optimization. This exclusive design also reduces inventory cost, saves space and provides a great deal of convenience to both distributors and contractors. American Hometec's units qualify for LEED points, meet NAHB green building standards, Green Plumbers USA® preferred method, EPA's Watersense®.



Because there are no coils with American Hometec's technology, the electric components are never in direct contact with the water being heated, preventing accumulation of lime scale inside the unit and increasing longevity of the unit.

Bosch Thermotechnology Corp.
50 Wentworth Avenue
Londonderry, NH 03053
866-642-3198
www.boschpro.com

Company profile: With more than 100 years of engineering experience, Bosch has a water heater solution that's ideal for every home or commercial project. From high-efficient gas condensing tankless water heaters to compact electric models and mini-tanks for those situations where you need hot water at the point-of-use, you can trust Bosch to build something to suit every application. Best of all, Bosch products are designed to complement one another, fit together and work together in solar thermal, cascading and recirculation systems, so you can tackle more jobs and customize solutions with greater confidence.

What's new: Bosch is putting the finishing touches on its newest North American training facility in Irvine, California. Eric Moffroid, sr. vice president of sales said, "California is a strategic market for both gas tankless, as well as solar thermal, and as such, Bosch felt it critical to develop a presence in this very large market." Updates, including the official grand opening, as well as training dates and registration details will be posted at www.boschpro.com.

- EnerBank and Bosch have teamed up to offer "Same-As-Cash" financing, which is widely used by homeowners to finance more than 50% of all home improvements of \$5,000 or more. Cade Bryant, EnerBank AVP relationship manager said, "So far we've exceeded expectations and have found that Bosch customers prefer the 6- or 12-month 'Same-As-Cash' options, which allow qualified homeowners to buy today (up to \$45,000 per job) and pay absolutely nothing until the end of the promotion period."

- Bosch Introduces HVAC Loyalty Program. As a member of the Bosch HVAC Loyalty Program you will be able to take part in exclusive activities all of which offer you the opportunity to earn valuable rewards.

In addition to earning rewards for products that you sell, the Bosch Loyalty Program provides the opportunity to expand your knowledge about Bosch, Buderus, and FHP products, gives you access to tools designed to help grow your business, gives you a competitive advantage and gets you closer to the reward of your choice.

You can redeem points at any time in the online shop. Points are accumulated by claiming eligible sales and participating in various program activities including trainings, "Question of the Week" quizzes, surveys and referrals. Sign up today and start earning rewards at www.BoschHVACLoyalty.com.

On the economy: Environmental stewardship is a core philosophy that drives all decisions and product development at Bosch. Today, Bosch is a leader in the development of next-generation technologies that deliver improved performance and efficiency while conserving our natural resources. The cutting-edge system for the training facility in Irvine will save about 75,000 gallons of potable water per year by recycling water used in live tankless training workshops. The closed-loop reclamation system includes a large storage vessel, high-head pump and evaporative rooftop chillers to cool the water from our multiple demo water heaters.



The quality materials, construction and unique engineering of Bosch condensing tankless models ensures robust performance and 20+ year life expectancy.

Chronomite Laboratories, Inc.
17451 Hurley Street
City of Industry, CA 91744
800-447-4962
www.chronomite.com



Company profile: Chronomite began in 1966 providing hot water for point-of-use commercial and industrial applications. At only the size of a dictionary, Chronomite tankless water heaters use electricity to supply hot water on demand to remote locations. After developing Omni Flow Controls in 1982, the company proved that water flow rate could be reduced while still producing a pressure-compensated flow rate. In 1992, Chronomite Laboratories Inc. patented the first microprocessor controlled tankless

The size of a standard dictionary, one small unit provides endless solutions in meeting a project's demands and space constraints. No need for pressure and temperature relief valves — just a cold-water connection and an electrical hookup to operate.

water heater to provide unlimited hot water simultaneously to multiple lavatories with one heater. Utilizing state of the art technology, the microprocessor reduces hot water delivery time, is 99% energy efficient and meets user demands for a cost-saving, quick-return product.

What's new: An all-new website at www.Chronomite.com that now features an online configurator to determine the precise model that's right for the job. The site also includes more educational and product resources, including step-by-step instructions on how to install. Updated spec sheets, downloads, comparison charts and online manuals make finding information more user-friendly.

On the economy: "The current or conventional infrastructure in place for energy, water and utilities is being reevaluated to protect our precious resources, and the alternative has the potential to be costly. Now, more than ever, there is a demand for eco-friendly alternatives. But also because of the economy, companies must provide solutions that are immediately accessible — low-cost alternatives that produce quick results in efficiency and fast payback for utilities," said Dennis Morris — president, Chronomite Laboratories, Inc.

Eemax, Inc.
353 Christian Street
Oxford, CT 06478
800-543-6163
www.eemax.com



Company profile: Eemax Inc, founded in 1988, is a leading “electric tankless water heater” manufacturer in the United States specializing in “green” hot water solutions for industrial, commercial and residential applications. Eemax has positioned itself as the market leader in the electric tankless water heater market with product innovation and the widest range of products.

What’s new: Recent product introductions include HomeAdvantage — a full feature residential electric tankless water heater line with high end stainless steel cover, digital finger tip temperature adjustment with LED display, easy 3/4 inch “quick connect” water fittings, patented staged heating element power modulation, and rated 99% energy efficient for maximum energy savings.

An Eemax industrial introduction includes the super powerful three-phase “Series Twelve” to comply with ANSI “tepid” water requirement for emergency eye, eye/face and safety showers up to 25 GPM.

On the economy: “The outlook for 2010 and 2011 are for slow recovery in construction, but electric tankless water heater segment looks to grow its market share in the water heater segment at an above average level,” said Aaron Siegal, vice president of sales, Eemax.

On going green: Eemax is very focused on providing green hot water solutions that are safe for its customers and the environment. Recently, Eemax obtained third-party certification, indicating all of its electric tankless water heaters meet lead-free legislation in Calif. and Vt. Also, because you can locate electric tankless water heaters close to the point of use, they can be used to achieve the stringent requirements of the new WaterSense® for the Homes program.

Rated 99% efficient, flow activates the Eemax tankless water heater and creates hot water as long as needed. And, because it is electric, no expensive or complicated venting is needed.

Grand Hall, USA, Inc.
3838 West Miller Road
Garland, TX 75041
866-946-1096
www.eternalcondensed.com



Company profile: Headquartered in Taipei, Taiwan since 1976, and with the U.S. office operating out of Dallas since 1985, Grand Hall serves as a leading manufacturer of innovative gas appliances and components for more than 30 years. Grand Hall’s top award-winning product, introduced in 2006, the original Eternal Hybrid Water Heater, has received industry accolades.

What’s new: Contractor Rewards Program is the newest incentive designed to support advanced training and specialized expertise for contractors. Contractors who register online to the company’s Dashboard system are eligible to earn points for every Eternal installed, as well as attend online classes, submit warranty registrations and surveys. For each registered Eternal product installation the system will automatically deposit points into the contractor’s account. During “Heating Season,” specifically the months of May and June, the reward points will be tripled. Top performing contractors will have the opportunity to gain enough points to redeem a Porsche as the potential top prize.

F.A.S.T. Class — Grand Hall’s Factory Authorized Service Technician (F.A.S.T.) program (http://eternalwaterheater.com/support/contact_us.aspx) designed to provide reliable and quality installation and repair service to Grand Hall’s water heating systems — held its first training session for the new Eternal Condensing Hybrid Water Heater earlier this year. Led by F.A.S.T. Program Developer Jim Firlein, the F.A.S.T. Class involved more than 40 contractors and resulted in two full classes. The class is a supplement of the F.A.S.T. program, which provides each contractor member with ongoing training, factory support and one-on-one instruction.

Eternal Condensing Hybrid can either be wall mounted or floor standing with water connections on unit’s top. Features venting with 2” or 3” PVC up to 100 ft., direct vent sealed combustion convertible, natural gas or propane on the same unit, and the indoor unit also can be converted for outdoors.

Hubbell Electric Heater Co.
PO Box 288
Stratford, CT 06615-0288
877-649-8589
www.buytankless.com



Company profile: Hubbell is a U.S. manufacturer of a full line of electric water heaters serving the residential, commercial, industrial, food service and marine/naval markets. Founded in 1920, Hubbell has pioneered the use of new technology in electric water heating, and in fact first advertised its point-of-use instantaneous water heater in 1926. Today, Hubbell’s full line of electric tankless water heaters are available in a broad range of sizes and features.

What’s new: Hubbell’s advanced control system displays information that simplifies the operation, maintenance and service of the Hubbell tankless. Adjustable in 1° increments in either °C or °F, the Hubbell heater maintains highly accurate and consistent hot water temperatures even at flows as low as 0.2 GPM. For the energy conscious user, the Hubbell heater displays kW Hrs consumed, total operating cost in dollars and total hot water usage (in liters or gallons).

On the economy: “Hubbell has advanced the electric tankless water heater market from a point-of-use hand washing product to a multi-fixture product capable of supplying hot water to an entire home or building. With the focus on improved efficiency and reduced operating costs, and the ever increasing emphasis on renewable energy sources for clean electric power, the market for electric tankless water heaters is poised for excellent growth,” said Sean Clarke, national sales manager, Hubbell.

FAQ: Why are gas tankless heaters ENERGY STAR labeled and Electric tankless water heaters are not? Because electric tankless water heaters are already 97%+ efficient, the DOE determined that the ENERGY STAR program was not needed to encourage consumers to take advantage of this already efficient technology.

With proper sizing, the newest generation of electric tankless water heaters are available in sizes that can provide hot water in flows in excess of 20 GPM. With models available in 1 and 3 phase power, there is a Hubbell electric tankless water heater for just about every application.

Navien America Inc.
1371 Santa Fe Drive
Tustin, CA 92780
800-519-8794
www.navienamerica.com



Company profile: In 2006, Navien America, Inc. was established to open new markets in the United States and Canada for KD Navien’s technologically advanced products. Navien America is eager to continuously provide higher quality and innovative products that are more environmentally friendly, energy saving and comfortable and convenient.

What’s new: The Navien “Condensing 98%” is one of the most environmentally friendly tankless water heater on the market. The Navien models eliminate more than 85% of the flue gas wasted by standard tankless water heaters, reducing CO₂ emissions by at least 420 lbs. less per unit per year. That equates to the photosynthesis work of approximately 14 trees or driving a car 420 miles less per year.

Navien comes to market with an exceptional collection of features including:

- PVC venting up to 100 feet;
- Exceptional performance: the optional “A” models include a mini-buffer tank eliminating the minimum flow rate requirement and the so-called “cold water sandwich” and a built-in pump offers recirculation capability for hot water to the faucets quicker and water savings;
- Precision Technology: with Navien’s patented Gas-Air Ratio Control (GARC), ideal combustion and steady temperatures are continuously monitored and maintained; and
- Premium materials: dual stainless heat exchangers for much longer life cycles than copper.

Navien’s “Condensing 98%” is the most environmentally friendly tankless water heaters on the market, eliminating more than 85% of the flue gas that standard tankless water heaters waste, reducing CO₂ emissions by at least 420 lbs less per unit per year. Navien’s commercial models incorporate full stainless steel internal piping that withstands most aggressive volumes and water types.

Noritz America
 11160 Grace Avenue
 Fountain Valley, CA 92708
 714-433-2905
 www.noritz.com



Noritz N-1321M-ASME commercial tankless water heaters supply endless hot water to 208 guest rooms in a California hotel.

Company profile: Noritz America is the U.S. arm of the Japan-based Noritz Group, which is the largest producer of tankless water heaters in the world. Noritz Group began producing water heaters in 1951 and tankless water heaters in 1966. In 1981, Noritz produced the first electronically controlled tankless water heater, which is the precursor to today's advanced tankless technology. Noritz established Noritz America in California in 2002. Today, Noritz has corporate offices, which include showroom, training, and technical support facilities, in five U.S. locations: Fountain Valley, Calif.; Dallas; Marietta, Ga.; Hawthorne, N.Y.; and Elk Grove Village, Ill.

What's new: The H2FLOW Cartridge-based, Scale Prevention System: The Ultimate Tankless Hard-Water Solution. Noritz has launched its new H2FLOW system to prevent scale buildup in water heaters. Scale buildup in hard water locations is the bane of any water heater. The H2FLOW is a cartridge-based system that crystallizes minerals as water enters the water heater. While crystallized, the minerals in the water will not scale up the water heater or the bathroom fixtures. Not only will the water heater last longer, but it also will perform at a higher efficiency.

H2FLOW is available in both residential and commercial models. The commercial solutions can treat up to 75 gallons per minute (single solution), and multiple units can be plumbed together to handle flow rates of over 1,000 gpm.

The cartridge for the residential version of H2FLOW needs to be changed only once every two years. Commercial versions will last for three years without having to replace the cartridge media. The system uses no chemicals or salt and is virtually maintenance-free. For contractors who install water heaters in hard-water areas, this is an up-sell that will give their customers peace of mind when investing in a Noritz tankless water heater.

Condensing in commercial. Condensing models are also gaining traction in the commercial segment. Right now, Noritz's commercial condensing model, the NCC199, is being installed in a common-vented, multi-unit configuration to provide sanitary hot water to a new hotel. Actually, it is a dual-plant approach, because the project owner decided to build two separate, multi-unit systems, using its modular approach and its condensing units.

180,000 BTU Concentrically Vented Tankless Water Heater. Noritz will launch its first-ever 180,000 BTU concentrically-vented model on September 1 to round out our line of whole-house tankless water heaters. The new model will use the same zero-clearance, 3" x 5" concentric venting solution as our larger, whole-home model, the NR98-DVC.

On the economy: "Sales to the new housing sector have been replaced by a stronger retrofit market, which has been fueled by federal tax credits and utility rebates in many locales. As a result, the impact on the contractor has depended in large measure on what part of the industry sandbox he or she plays in. As a result, we have seen a number of new-build contractors reorient their businesses to retrofit and replacement," said Jason Corey, branch manager, Midwest Region, Noritz America.

Quietside
 8750 Pioneer Blvd.
 Santa Fe Springs CA 90670
 562-699-6066
 www.quietside.com



Company profile: Founded in 1998, Quietside brings energy efficient, environmentally friendly HVAC products from across the world to the North American market — Samsung Mini Splits, Samsung System AC and Quietside tankless and dual purpose water heaters. Starting with a single location in Los Angeles, Quietside has grown to add two more locations in Carlisle Pa. and Fort Worth, Texas to expand its inventory and technical support of its products. The ODW tankless water heater was launched in 2008 as a result of three

Rheem Manufacturing Co.
 1100 Abernathy Road, Suite 1400
 Atlanta, GA 30328
 800-548-Rheem
 www.rheem.com



Company profile: Rheem Manufacturing Company was established in the mid-1920s when brothers Richard and Donald Rheem acquired a galvanizing plant in San Francisco. In the 1930s, Rheem began manufacturing water heaters, and by 1936 had coast-to-coast distribution. During the 1940s and 1950s, the company increased its product line to include space heating units for homes, oil furnaces and air conditioners.

In 1959, Rheem acquired Ruud Manufacturing Company, a pioneer in the water heating industry with a well-regarded product line and a distribution network throughout North America. In subsequent years, Rheem entered the heating and air conditioning market and expanded in the late 1960s and 1970s with the rapid growth of the central air conditioning industry. In 1985, the company acquired Raypak, a leading producer of copper tube boilers used for swimming pool heating and commercial hot water supply and hydronic heating.

In 1987, Rheem became a wholly-owned subsidiary of Paloma Industries of Nagoya, Japan, the world's largest producer of gas appliances.

Today, Rheem is a leading global producer of residential and commercial water heaters, central warm air furnaces and air conditioners, and swimming pool heaters, commercial boilers and other whole home comfort products.

Rheem is headquartered in Atlanta. Rheem has manufacturing facilities in Montgomery, Alabama; Fort Smith, Arkansas; Milledgeville, Georgia; and Oxnard, California. Rheem has two Canadian locations in Hamilton, Ontario and Mississauga, Ontario, and one Australian location in Mulgrave, Victoria. Rheem also has two manufacturing facilities in Mexico, one in Nuevo Laredo and one in Mexicali. All manufacturing facilities are ISO 9001 certified.

What's new: Rheem has added tankless electric water heaters and the industry-leading Rheem 95 Series tankless water heaters to its expansive line of water heating products available nationwide. These next generation tankless water heaters offer smart features designed to save contractors money on installation costs, while also helping today's water-conscious customers.

Rheem 95 Series Tankless Water Heaters: Available as indoor direct vent or outdoor models, the Rheem 95 Series tankless water heaters come with a .26 GPM minimum flow rate, the industry's best minimum flow rate, an important feature that ensures homeowners using low-flow fixtures receive warm water without having to increase the flow of hot water.

Rheem Tankless Electric Water Heaters: Capable of providing nearly instantaneous hot water, these new products are available in six capacities ranging from a 3 kW 110 volt model to a 27 kW 240 volt model.

In addition, Rheem has added two new environmentally-conscious solar water heating solutions to the company's line of SolPak active solar water heating systems: tankless gas products and Marathon™ storage tanks.

Capable of providing nearly instantaneous hot water, the new Rheem Tankless Electric Water Heaters feature a compact, durable design that can be installed where hot water is needed.

years of R&D to be one of the first condensing tankless water heaters on the market in North America.

What's new: Quietside opened its third location in Fort Worth in the first quarter, and it is actively providing training at its facilities or its distribution base. Also, Quietside is expanding the ODW product offering later this summer. Quietside was one of the first companies in the HVAC industry to have social networking on both Facebook and Twitter; it is constantly updating these to provide interesting information on our products and training/sales operations.

On the economy: "We feel that tankless has become a more viable product, especially with the ARRA tax credits and the utility rebate programs. Consumers, when faced with a need for a water heater, are looking closely for a product that is energy efficient and allows them to maximize rebates. This is creating demand and the contractors are recognizing this and more are offering tankless products where before they ignored that market segment," said John Miles, vice president of sales and engineering, Quietside.

Rinnai America Corporation
103 International Drive
Peachtree City, GA 30269
800-621-9419
www.rinnai.us

Company profile: Rinnai America Corporation, a subsidiary of Rinnai Corporation in Nagoya, Japan, was established in 1974 and is headquartered in Peachtree City, Ga. Rinnai Corporation manufactures gas appliances including tankless water heaters, a wide range of kitchen appliances and heating and air conditioning units. As one of the technology leaders in its industry, Rinnai is the largest gas appliance manufacturer in Japan and is the number one selling brand of tankless gas water heaters in North America. Annual corporate revenues, including those of its subsidiaries, are in excess of \$2.5 billion. With a global perspective to create 21st century products for the home and business, Rinnai Corporation commits itself to safety and the pursuit of comfortable lifestyles.

What's new: Rinnai is focusing on training and events surrounding its new condensing products, the condensing tankless and condensing wall-hung boiler. Rinnai introduced the combination of tankless technology and concentric venting to North America to deliver a high level of comfort, efficiency and safety. In keeping with its commitment to reliability and safety, Rinnai has introduced a new line of concentric venting with a polypropylene inner pipe for Rinnai Condensing Tankless Water Heaters. Rinnai's condensing concentric venting is the safe and cost effective choice for venting.

FAQ: How can this little box provide enough hot water for my whole house?

Tankless water heaters heat water on demand and can provide up to 9.8 gallons per minute of hot water per unit. One unit can provide enough hot water for the average 2 1/2 -3 bedroom house but can be banked to provide enough capacity for large homes and commercial applications.



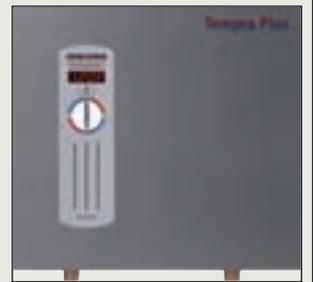
Stiebel Eltron, Inc.
17 West St.
West Hatfield, MA 01088
800-582-8423
www.stiebel-eltron-usa.com

Company profile: Stiebel Eltron was founded in 1924 by Dr. Theodore Stiebel in Berlin. Initially, the company concentrated on the manufacture of electric water heaters for the German market. In the decades that followed, Stiebel Eltron branched out into additional products and pioneered the development of tankless, electric water heaters starting in the 1950s. Today, Stiebel Eltron is one of the largest manufacturers of tankless, electric water heaters in the world. The solar water heating and heat pump systems have been developed over the last 30 years and Stiebel Eltron is a world leader in solar thermal and heat pump technology, as well. The company has been located in North America since 1980.

What's new: The Stiebel Eltron Temptra® models have a digital display for °F or °C readout and Advanced Flow Control™ to automatically adjust the flow rate in order to maintain set point temperature. Further, the Temptra® series is now an ideal backup for solar thermal systems.

The Stiebel Eltron new concept Accelera® 300 heat pump water heater works like an air conditioner but instead of dumping the heat outdoors, it puts it into the 80-gal. tank of water. The Accelera® 300 heat pump water heater can extract up to 80% of its energy requirements from the energy in the air around it. Compressor and fan consume only 1kWh of electricity to generate the heat equivalent of 3 – 5kWh. Among heat pump water heaters the Accelera® 300 has the largest capacity (80 gal), highest energy factor (2.5), highest first hour rating (78 gal) and lowest power consumption (1739 kWh/year) as determined by DOE testing.

Stiebel Eltron's new warehouse in West Hatfield is slated for completion in July 2010. It will be a state-of-the-art energy efficient building and it will feature solar thermal heating, a super-insulated structure and a green roof.



Temptra® Plus models deliver output up to 140° and include heavy-duty electronics, single flow sensor, easy access hinged cover and a larger inlet filter screen.

Takagi Industrial Company U.S.A.
5 Whatney, Irvine CA 92618
888-882-5244
www.takagi.com

Company profile: Safety, quality and service are the cornerstones of Takagi's success. Takagi has been making tankless water heaters since 1952. The commitment to innovation and customer satisfaction is evidenced by the revolutionary and highly efficient tankless water heaters it has produced over the years. "As industry leaders, we pride ourselves with being 'the first' in many areas including the following:

- Takagi is the first tankless water heater company specializing in tankless-only products to enter the North American market.

- Takagi is the first tankless water heater company to offer a tankless product (the T-H1) with a thermal efficiency rating of up to 95%.

- Takagi is the first tankless water heater company to offer a "direct vent convertible" tankless model (the T-K3), which allows you to convert the unit to a direct vent unit.

- Takagi is the first tankless water heater company to utilize the air-fuel ratio rod, a unique safety device," said Koji Matsumura, general manager, Takagi.

Takagi is currently working with the Federal Government to help set standards in terms of getting tankless water heaters approved by Energy Star ratings.

Takagi maintains regional offices in California, Florida, Illinois, New Jersey, Texas, and global offices in Canada and Japan.

What's new: Takagi has also introduced the Authorized Takagi Service Representative (ATSR) program. This is available to any installer that has already completed the takagi basic training class.



Takagi introduced the T-H2-DV and T-H2-OS the 2nd generation condensing tankless model, capable of venting with 3" or 4" schedule 40 PVC. Concentric termination is made of PVC for 0" clearance to combustibles and one-wall penetration for a clean install. The T-H2-DV and T-H2-OS also feature Takagi's Easy link system allowing for installation of up to 4 units with the use of a controller box. The T-H2-DV and T-H2-OS offer 9 GPM Max of endless hot water and can provide up to 36 GPM max when using the Easy link system.

WaiWela/Efficient Technology Sales (ETS)
5350 Joliet St. #2
Denver, CO 80239
800-605-6542
www.waiwela.com

Company profile: ETS/WaiWela was founded in 2004 by Neil Greenzweig, whose tankless experience began in 1976. ETS was founded to bring technical experience, product knowledge and marketing know how to the rapidly expanding tankless water heater market. Said another way, "I could no longer continue gardening on Maui when the opportunity to participate in my area of expertise manifested itself," said Neil Greenzweig, CEO, WaiWela.

What's new: The new WaiWela PH2-28RDVS tankless water heater is excellent for average 2-3 bath applications. Remote included. High altitude capability. Easily convertible from residential to commercial unit. Temperature range from 85F to 140F or 185F with commercial conversion kit. 54 lbs; versatile venting. Ideal for solar back up. ENERGY STAR rated and qualifies for Federal Tax Credit up to \$1,500.

- Mezzanine expansion project to create solar DHW/tankless training facility nears completion despite a spectrum of obstacles.

On the economy: "Tankless is a tougher sell for the contractor in the wake of shrinking home equity and job insecurity but tax credits continue to motivate buyers and product offering are becoming more installer friendly," said Greenzweig.

On going green: "Our company is the largest wholesaler of solar thermal products in Colorado. We continue to tweak our product offerings to become more of an environmental advocate. We look at product lifecycle recycling options," said Greenzweig.



The new WaiWela PH2-28RDVS tankless water heater is excellent for average 2-3 bath applications. Ideal for solar back up, it is ENERGY STAR rated and qualifies for Federal Tax Credit up to \$1,500.

Noritz opens tankless showroom

MARIETTA, GA. — Noritz America Corp. recently opened a new showroom and contractor training facility in the Atlanta suburb of Marietta, with the goal of providing hands-on instruction on the benefits of tankless water heating for plumbing, me-



chanical and HVAC trades people, as well as their residential and commercial customers. The newly renovated, 1,650-square-foot showcase is part of Noritz's 13,000-square-foot

distribution center in Marietta that serves as a logistical hub for the Southeastern United States.

"The design and layout of our new product showroom is technically focused to quickly familiarize a visitor with the critical details of tankless water heating technology," said branch manager Adam Brown. "This approach will not only support 'Noritz University,' our contractor school that offers monthly training sessions; but it will also help educate homeowners and commercial end users looking to learn how tankless works, where it can be installed, and whether they need help from one of our factory-qualified installers."

- Residential: This section offer both indoor and outdoor installs, including a basement setup as well as an outside vignette with the unit housed inside a protective metallic

box that is recessed into the exterior wall. "Before vs. After" vignettes demonstrate the considerable space savings of a tankless installation versus tank-type water heater.

- Commercial: Besides individual commercial models, this section features a multi-unit, manifold setup with common venting for heavy-duty projects requiring large volumes of hot water in a small time frame. The "Before vs. After" display in this area features a Noritz commercial tankless model next to a large commercial tank-type water heater.

Additional displays include a high-efficiency condensing tankless water heater, as well as a hydro-air install featuring tankless with an air handler.

For more information, visit Noritz online at www.noritz.com.

Rinnai products showcased in HGTV Green Home 2010

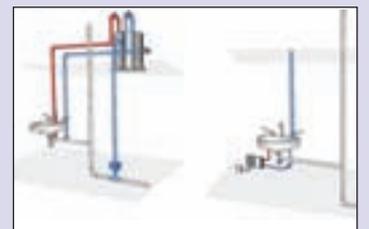
PEACHTREE CITY, GA. — Rinnai Corp. announced that products from its energy efficient product line are featured in the HGTV Green Home 2010. Located in Plymouth, Mass., the HGTV Green Home 2010 features a decor that is both stylish and earth-friendly. Rinnai's RC80HPi condensing tankless water heater and Q85S condensing wall-mounted boiler provide energy-efficient water heating and home heating to the HGTV Green Home, while the company's EnergySaver™ intelligent fireplace brings warmth and high-efficiency heating to the home's living room. In celebration of the company's sponsorship of the HGTV Green Home, Rinnai is giving away one tankless water heater each week through June 4, 2010, in its "Win a Tankless" online sweepstakes for consumers.

The HGTV Green Home 2010 contains two of Rinnai's most energy-saving products — the RC80HPi condensing tankless water heater and Q85S condensing wall-mounted boiler. Rinnai's tankless technology heats water only when needed and shuts down when demand ceases, significantly reducing energy consumption when compared to standard tank-style water heaters, which constantly heat water even when it is unnecessary. The ENERGY STAR® qualified tankless unit provides the HGTV Green Home's kitchen, master bathroom, laundry room and kids' bathroom with continuous hot water and demonstrates the ability of Rinnai® tankless models to supply multiple

Chronomite launches redesigned website

LOS ANGELES — Chronomite®, a manufacturer of point-of-use instantaneous water heaters, announced its redesigned website at www.Chronomite.com.

The redesigned website now features an online configurator to determine the precise model that's right for the job. The site also includes more educational and product resources for Chronomite's eco-friendly tankless electric water heaters, including step-by-step instructions on how to install. Updated spec sheets, downloads,



The left configuration depicts a hot water supply with conventional tank heater; the right is a hot water supply with Chronomite® tankless heater. Using only a cold water line and electrical hookup, installation costs are minimal, and there is no need for a costly piping/valving associated with conventional hot water heaters.

comparison charts, and online manuals make finding information more user-friendly. Model information is also organized specific to a user's interest. For instance, a contractor, specifier or owner now experiences streamlined searches and tailored resources. Anyone interested may visit the website to learn more about how Chronomite works and discover all the valued benefits delivered from the first innovators of tankless water heaters.

hot water appliances at once. In addition to its convenience and energy saving benefits, the RC80HPi model also helps protect the environment with very low CO₂ and NO_x emissions.

The HGTV Green Home uses Rinnai's ENERGY STAR qualified Q85S condensing wall-mounted boiler to heat and circulate warm air throughout the house, creating a comfortable indoor environment. The Q85S model operates at up to 96.5 percent AFUE efficiency and uses considerably less energy than a traditional gas boiler thanks to the unit's condensing technology, which recaptures residual heat from flue gases and transfers it into the water and air being heated.

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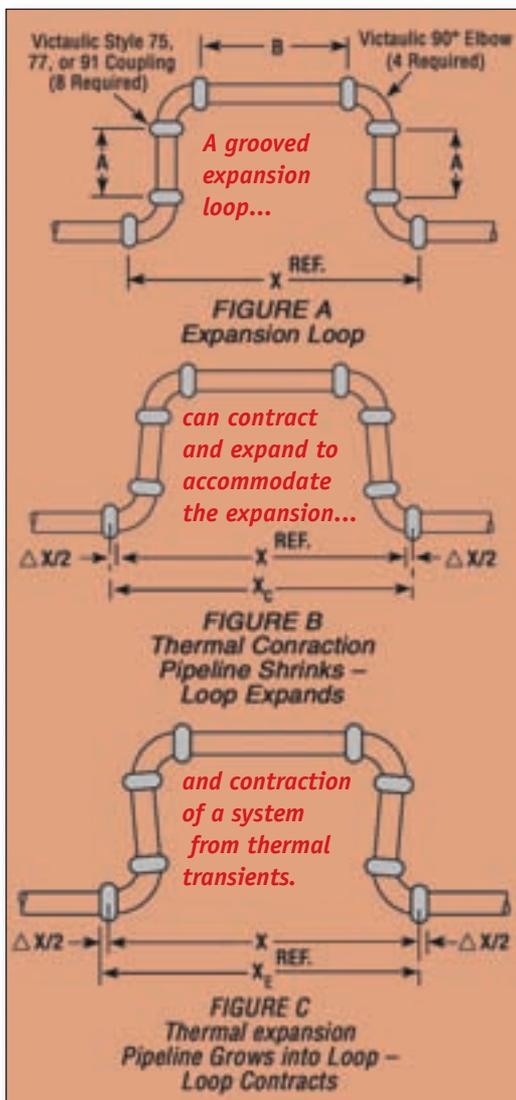


Accommodating piping movement in plumbing systems

BY DAVID L. HUDSON

Piping movement within a structure is often a concern for engineers designing and specifying for pipe installation. If not adequately accommodated, repeated stress on a piping system can cause damage to equipment and threaten the structural integrity of the building itself. The key to effectively accommodating movement in a building is to allow the predictable, controlled movement of the piping itself.

A piping system may experience horizontal movement, vertical movement and angular deflection simultaneously. Additional strains on the piping system vary based on whether the piping is vertical or horizontal. For horizontal piping, spatial constraints around the length and turns of the pipe should be considered during the design phase. For vertical piping, considerations are different and should involve dynamic, static and elevation head calculations of the pressures and loads that are exerted on the bottom portion of the pipe.



Depending on the type of material used for the plumbing system, there are several methods for accommodating pipe movement. The selection of one of these methods is dependent on the type of system, the project requirements and the engineer's preference. Not all system designs can be predicted and described all at once. Since it is impossible to predict all system designs, this article will discuss the design benefits and mechanical advantages of the grooved piping method when used to accommodate movement in a building's plumbing system.

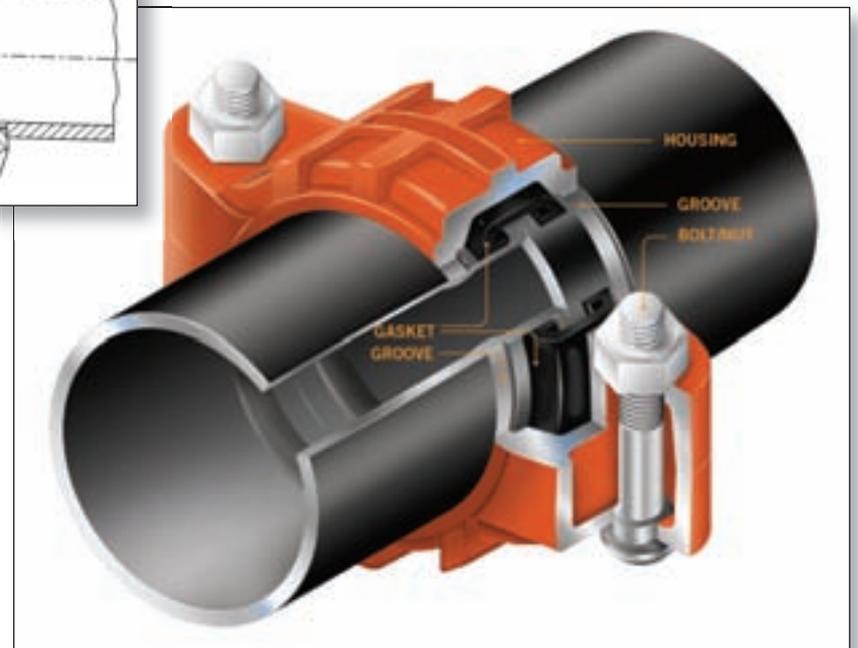
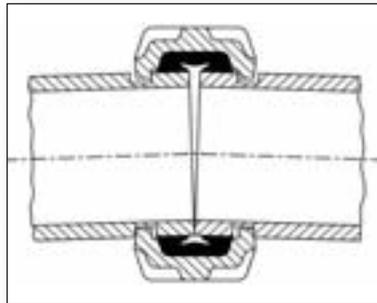
Deflection and linear movement

Grooved mechanical couplings are available with two distinct performance features. One class is designed as "rigid" and the other as "flexible." Rigid grooved mechanical couplings are designed to "fix" the joint in its installed position, permitting neither linear, angular nor rotational movement at the joints. On the other hand, flexible grooved mechanical couplings are designed to allow controlled linear and angular movement at each joint, which can accommodate pipeline deflection, building creep and settlement.

Grooved mechanical couplings allow for movement in the pipe due to the design of the components. The dimensions of the coupling key are narrower than the groove in the pipe, allowing room for that coupling key to move in the pipe groove. Additionally, the width of the coupling housing allows for pipe end separation, therefore leaving room for controlled linear and angular movement. The mechanical coupling remains a self-restrained joint and the unique pressure responsive design provides sealing even under deflection and pipe movement.

Grooved mechanical couplings are a great alternative to welded U-shaped expansion loops, welded offsets, expansion joints and rubber bellows.

These couplings are easier and faster to install and accommodate deflection and linear movement within the design capability of the coupling, all the while doing this within the

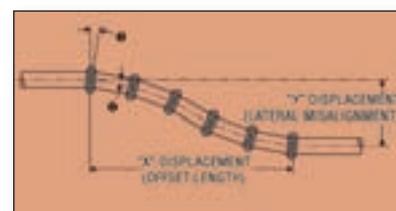


Because the dimensions of the coupling key are narrower than the groove in the pipe, and because the width of the coupling allows for pipe end separation, the unique pressure responsive design provides sealing even under deflection and pipe movement.

product's "free range of motion." This means that imparted deflections can be accommodated in smaller spaces, with low stress on the components.

Settlement

Unanticipated pipeline deflection can damage a building's equipment or even compromise the structural integrity of the building itself. The



Drawing shows how flexible couplings deflect from the straight line to allow for building settlement.

piping system designs must work in concert with the building design. Deflection imposed on a piping system may occur due to uneven settlement, particularly when considering new additions to existing structures.

In a stainless steel or galvanized system, piping misalignment due to uneven building settlement is addressed by using an even number of flexible couplings and permitting the intermediate pipe to "toggle" as the

movement occurs. To determine the number of couplings required, define the amount of lateral misalignment on a particular pipe run and the length of that pipe run. The objective is to achieve the required displacement using the minimum number of couplings. Due to symmetry around a transition point, the point of inflection is a pipe spool and not a coupling. The number of couplings and the length of the pipe

spools are two variables that can be altered to obtain the desired misalignment. Other factors, such as the maximum angle of deflection at each coupling and the maximum pipe end separation, are a function of the size and style coupling being used.

Thermal transients

Thermal transients may impose deflection on a piping system as the pipe grows when heated and contracts when cooled. All materials, including pipe, machinery, structures and buildings, experience dimension changes as a result of changes in temperatures. This will often occur at directional changes, or cause "bowing" at the mid points of long straight pipe runs, resulting in stress on the piping system and equipment.

Expansion joints are devices that can be compressed or expanded axially. Cost-effective expansion joints utilize grooved mechanical couplings and specially grooved, short pipe nipples with flexible couplings for galvanized carbon steel or stainless steel systems, placed in long straight runs of pipe and pre-set to allow the desired amount of contraction and/or expansion. Axial movement (Turn to Piping... page 50.)

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Piping movement? No problem!

(Continued from page 48.)

ment can be adjusted by simply adding or removing couplings.

Perhaps a more desirable way to accommodate for thermal movement is to build a free-floating system. These piping systems allow thermal expansion and contraction without the use of expansion joints. As long as this movement does not cause bending moment stresses at branch connections, it is not harmful to joints and changes in direction or to parts of structures and other equipment. Typically galvanized carbon steel and stainless steel systems utilize a free-floating system since it requires the use of flexible couplings.

A free-floating system can be achieved by installing additional grooved mechanical joints or by installing guides to control the direction of movement. The affects of pressure thrusts must be taken into account when utilizing flexible grooved couplings, as the pipe will be

moved to the full extent of the available pipe end gaps when allowed to free-float. To make sure the added stress on the system is properly supported, a free-floating system may also require more supports and anchors along the pipe length.

In a stainless steel or galvanized system, a flexible mechanical joint can also be used in expansion loops. Also, it is important to note that expansion loops utilizing rigid couplings are not designed to accommodate angular deflection, however an expansion loop utilizing rigid grooved copper couplings is designed to conform to industry standards based on the Copper Development Association's *Copper/Brass/Bronze Product Handbook*, and the American Society for Metals', *Source book on Copper and Copper Alloys*.

The deflection capability of flexible couplings allows for thermal growth/contraction to be absorbed within the couplings at the elbows as

the thermal forces induce deflection. A total of eight flexible grooved mechanical couplings and four grooved end 90° elbows and three pipe spools are required to complete each expansion loop. (Figure A, below) As system temperatures lower and the pipe run contracts, the loop expands and the deflection capability of couplings accommodates this movement. (Figure B, below) As system temperatures increase the opposite effect occurs as the pipe run expands and the loop contracts with the couplings accommodating the deflection in the opposite direction. (Figure C, below) A significant benefit to using this configuration is that a loop constructed in this manner will be 1/2 to 1/3 the size of a welded loop with the same capacity, and will accommodate the movement without inducing stress into the pipe.

Building creep or subsidence

Similar to thermal transients, deflection or linear movement imposed on a piping system may

occur due to building creep. Building creep is the common term for the amount of actual building shrinkage that will occur over time. This is an important consideration for high rise construction.

Depending on the pipe material, accommodating building creep can be addressed three different ways using mechanical piping systems: flexible system, rigid system or a combination of both.

In a flexible grooved system utilizing only flexible grooved mechanical pipe joints, risers are installed with anchors at the top and bottom with the piping guided every other pipe length to prevent "snaking" of the line. A sufficient number of flexible couplings must be utilized to accommodate the anticipated movement. Proper gapping of the pipe ends within the coupling is required in order to allow the riser to compress with the building.

In a rigid system utilizing only rigid grooved mechanical pipe joints, risers can be treated similar to a welded system, and where movement is required expansion joints or offsets are designed into the riser to accommodate movement and prevent damage to components.

By designing risers with a combination of both rigid and flexible grooved joints, engineers can utilize rigid couplings to reduce guiding requirements and the flexible grooved joints to accommodate the movement required.

The bottom line

When specifying and designing a plumbing system, grooved mechanical systems offer several different methods to provide flexible, controlled movement. The choice of expansion joints, free-floating systems, flexible couplings or expansion loops will be based on the type of piping system, especially depending on whether a stainless steel, galvanized carbon steel or a copper system will be installed. It will also depend on the amount of anticipated movement, and finally, the plumbing engineer's preference.

Overall, choosing the grooved mechanical method is an efficient way to accommodate excess stress on any piping system, eliminate incidents of ruptures and leaks due to piping movement, decrease maintenance needs of equipment, and simplify the commissioning process. ■

A senior product engineer for Victaulic Company Inc., David L. Hudson is a practicing mechanical engineer with almost 30 years of experience. He can be reached at dhudson@victaulic.com.

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Rainwater harvesting – catch it

The word 'sustainable' was undefined 20 years ago, a political topic 10 years ago and part of our culture today

BY PETER KRAUT

With LEED 3.0, water conservation is now a pre-requisite and the use of rainwater harvesting can add up to 8 points to your scorecard. Still, these systems are not yet listed in any major code, nor are they defined in any adopted standard. As of today, the authority to prevent or permit these systems lies in our local jurisdictions. More importantly, the design and inspection of these systems is dependant on local knowledge.

Happily for everyone, there has been some recent progress on the issue. In October of 2009, The American Rainwater Catchment Systems Association (ARCSA) published a draft of a new standard titled Rainwater Catchment Design and Installation Standards. On February 1, 2010, the International Association of Plumbing and Mechanical Officials (IAPMO) published the 2010 Green Plumbing



Photo A: Vortex filters outperform debris screens by allowing debris to fall out of suspension and washed down an auxiliary drain while 90% of the clean water goes to the collection point.

and Mechanical Supplement. This all came just in time, too. As I began the design of a new parking structure, a local rainwater harvesting ordinance was revealed. It requires that all commercial development and site plans submitted after June 1, 2010 must include a rainwater harvesting plan. This ordinance requires that 50% of the landscape water budget must come from rainwater harvested on site. That's no easy task when you consider that the location is Tucson, Arizona.

Why capture and reuse rainwater? There are many good reasons. Some

are obvious while others may not be. Let's take a look:

- **Save water:** Using captured rainwater saves water. Every gallon of rainwater reused is one less gallon that must come from our overtaxed wells and reservoirs.
- **Save Money:** Using captured rainwater reduces potable water use. This lowers utility costs.
- **Reduce pollution:** Rainwater washes surface pollution into our storm drains. In many cases, this polluted water ends up in our oceans.
- **Maintain existing infrastructure:** Many of our storm drains and water supplies have reached their capacity. Rainwater harvesting reduces the load allowing them to remain in service while supporting new growth.

In Tucson, they suggest that a water budget be developed first. The annual requirements of different types of plants, as shown in Table 1, indicate

Plant water demand category	Water use (ft. / sq.ft.)
very low water use	0.8
low water use	1.7
medium water use	2.9
high water use	4.2

Table 1: Plant water demand per year.

that even "very low water use" plants require a great deal of water. Still, let's consider medium water use plants: The plants will require 2.9 feet of water per year so we must harvest 1.45 feet per year for irrigation. Assuming 7,500 square feet of landscaping, we will need 10,875 cubic feet of water. That's over 80,000 gallons per year

Having decided to proceed with rainwater harvesting, our first step is to collect it. Water can be collected from any hard surface. Roofs and decks are good sources of rainwater for re-use. These areas should be clear of overhanging vegetation and airborne pollution. Drain strainers and gutter screens are useful for removing large debris. Some areas, such as parking decks can contain significant pollutants and should be avoided.

Having collected the water, our next step is to convey it to a central point where it can be treated, stored and distributed. This should be accomplished using an approved roof drain system. Listed drains and pipes in a conventional system are common. Occasion-

ally, long distances need to be covered where little or no slope is available. In these instances, a siphonic roof drain system might be appropriate. The General Motors Assembly Plant in Lansing, Michigan used just such a system.

Before entering the tank, the captured water must be filtered. The term first flush refers to the initial rain that cleanses the surfaces. The majority of the pollutants will be washed down with the first flush and this water should be avoided. Any diverter used

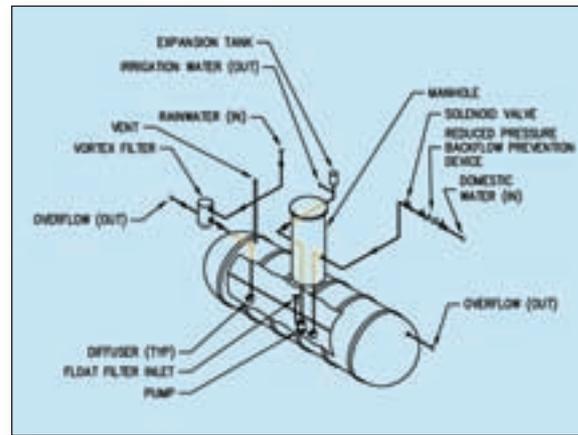


Figure 1: A properly designed rainwater collection system using an underground cistern.

for this purpose should be self-draining between rainfall events. The water drained from this device should be piped to a disposal location that will not cause erosion. Consideration should be given to the pollutants in this water, and when taken to the storm drain, local ordinances for the treatment of surface runoff may apply.

Following a first flush diverter — before the tank — a debris screen is required. Vortex filters, like the cutaway shown in Photo A, are preferred in lieu of debris screens and often replace the first flush diverter, as well. These devices incorporate a fine filter in a housing that provides an unpressurized circular flow of water. This allows debris to fall out of suspension and be washed down an auxiliary drain while 90% of the clean water makes it to the collection point. If debris screens are used, they should be configured with maintenance in mind. Regardless of what system is used, care should be taken to ensure that the system does not trap water on the roof.

The rainwater harvesting tank, called a cistern, can be located above or below grade. Above grade tanks should be opaque, UV resistant, and, where possible, shielded from direct sunlight. Below grade tanks should be provided with manholes and ballasts appropriate to withstand any buoyant forces from surrounding groundwater. They should be located outside of the bearing footprint of any surrounding structures.

Manholes should be located and elevated to prevent intrusion by unfiltered groundwater. These tanks will require several fabricated connections.

At least one inlet is required. Auxiliary inlets may be necessary. An overflow outlet and a vent are also required. Typically, the vent is extended above grade and the overflow is routed to the storm drain system. In some cases, it may discharge to grade. Keep in mind that regular overflow is necessary for a healthy tank; it carries the floating debris out. This flow will therefore have a much higher concentration of solids than any other. A trap

in the overflow and a screen on the vent will keep insects and rodents out of the tank.

Some thought should go into the sizing of the tank, but first the roof area needs to be checked. Let's go back to our Tucson example. First, the plants require 2.9 feet of water each year, but the annual rainfall is only 1 foot per year. We must therefore harvest our water over a much

greater area than we are distributing it. Second, some months are drier than others. Due to monsoons, the rainfall rates in Tucson are not what you might guess. Now look at Los Angeles. A greater annual rainfall is interrupted with three months of almost no rain at all in the summer. Information, such as

Month	Tucson Rainfall (in./month)	Los Angeles Rainfall (in./month)
January	0.99	3.1
February	0.88	3.5
March	0.81	2.6
April	0.28	1.1
May	0.24	0.3
June	0.24	0.1
July	2.07	0
August	2.30	0.1
September	1.45	0.3
October	1.21	0.5
November	0.67	1.4
December	1.03	2.5
TOTAL	12.17	15.5

Table 2: Comparing rainfall patterns between Tucson and Los Angeles.

that shown in Table 2, can be found at the National Weather Service Forecast Office of the National Oceanic and Atmospheric Administration. You can find it on line at www.noaa.gov.

Tucson uses the arbitrary decision that a tank is filled and emptied four (Turn to Catch the rain... page 54.)

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Circle 36 on Reader Reply Card

Catch the rain and use it

(Continued from page 52.)

times a year. I prefer a more calculated approach. To meet our 50% city requirement, we need to harvest 10,875 cubic feet of water each year. If we harvest 12.17 inches, or about 1 foot of rain over our 40,000 square foot roof, we'll have 40,000 cubic feet of water each year. Ten months out of the year, we will collect more than we use. In some cases, a day-by-day model of rainwater in and out of the tank may be necessary.

Now we can turn our attentions to the tank size. Considering the daily local weather statistics from NOAA, we should consider about a three weeks of drought protection. Using 3/52 of the annual need of 10,875 cubic feet, we should store 627 cubic feet, or just under 5,000 gallons. In places where rain is more frequent, smaller tanks can be used. In areas like Los Angeles, where several months without rain is

common, bigger tanks are required.

When water enters the tank, care should be taken to avoid stirring the debris that has settled on the bottom. The inlet should be extended down, near the bottom of the tank and a smoothing inlet fitting should be used to direct the water upwards. Similarly, the water should be drawn off the tank from where it is cleanest — a few inches below the surface. A floating filter allows this to be done with ease while the water level in the tank fluctuates. To extract the water, a pump is needed. The pump should be controlled with a pressure sensor that energizes when pressure drops. A pneumatic tank is required keep the pressure during periods of no flow.

One more thing is needed. Even with a three-week storage, we will likely run out of water water during May or June. Uniform rainfall just doesn't happen in nature. A domestic water back-up is

necessary. It can be connected downstream of the pump with a pressure regulator and a check valve, or simply used to fill the tank and controlled by a float. Since our harvested water is non-potable, a reduced pressure principle backflow device is required on the connection. Our completed system looks like figure 1 on page 52.

What else can we do with the water once captured? Irrigation is the most likely due to the relatively low first cost. Any use within the building would require additional steps to remove any remaining debris and eliminate odors before use. Sediment filters and carbon filters are most common. The flushing of toilets is probably the greatest use for captured rainwater within a building. Washing laundry is another good application for rainwater. It is naturally soft water and this saves soap as well as water. Unfortunately, most administrative authorities have been slow to adopt this use due to health concerns.

In closing, some interesting points

against rainwater harvesting must be made. Who would oppose such an environmentally sound and sustainable practice? Well, until 2009, the State of Colorado prohibited rainwater harvesting and now allows it only for residential use subject to limitations. The reason is linked to the water rights of the people downstream. Capturing rainwater prevents it from reaching what would have been its ultimate destination. In a strange way, this makes sense. In Los Angeles, where excess storm water is simply drained into the ocean along with all of its pollutants, rainwater harvesting makes a little more sense. ■

Peter Kraut, P.E., CPD is a licensed Mechanical Engineer in 22 states. He founded South Coast Engineering Group, near Los Angeles in 2001. In addition to conventional plumbing and HVAC projects, he has designed more than five million square feet of siphonic roof drainage systems in the United States. He can be reached by email at pkraut@socoeng.com.

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Circle 37 on Reader Reply Card

Lead-free leaders



Sponsored by Watts Water Technologies

IAPMO certifies Caleffi products lead free

MILWAUKEE — Caleffi Thermostatic Mixing Valves, Zone Valves and its new FlowCal™ constant flow control valves are now certified by IAPMO to meet the new 2010 lead free standards implemented this January in California and Vermont. Caleffi's certified products are as follows:

Thermostatic Mixing Valves

- 5213 Series scald protection valves are ASSE 1070 listed for safe operation in point-of-use applications such as sinks and faucets.

- 521 and 2521 Series valves are ASSE 1017 listed for point-of-

distribution applications such as hot water heaters. The 2521 Series have



especially high temperature ratings for use with solar thermal hot water heaters.

Zone Valves

Four of Caleffi's patented Z-One™ zone valve bodies are now available as lead free.

Common potable applications in-

clude diverting solar pre-heat water to a backup instantaneous hot water heater, or for use with a fan coil in an open system.

FlowCal™

Caleffi's newly introduced FlowCal™ is a flow control valve that maintains flow rate regardless of differential pressure changes. Common potable applications include use with an open fan coil system. In closed systems, they're ideal for controlling flow in any heat emitter including fan coils, base boards, panel radiators or single-zone radiant manifolds.

HD3, HV and PR)

- Packages — (Mini Boosters)
- Tanks — (PT/PTA, WT/WTA)
- Flanges — (Check-Trol®, companion flanges and installation flanges)

The new line of lead-free products reinforces ITT's ongoing commitment to green, energy-efficient solutions. For more info, visit www.bellgossett.com.

Eemax, Inc. announces California & Vermont lead-free certification

OXFORD, CONN. — Eemax, Inc., a manufacturer of commercial and residential electric tankless water heaters, announced the achievement of obtaining Lead-Free Certification for its products, complying with both California and Vermont's lead-free laws.

Technological advances are helping reduce the amount of lead in plumbing and many states have begun to set their own lower lead content standards. California Assembly Bill 1953 calls for a dramatic reduction in lead content in plumbing products intended to dispense or convey water for human consumption through drinking or cooking. The new California law defines "lead free" to mean not more than a weighted average of 0.25% on the

UL offers alternative lead-free testing program

NORTHBROOK, ILL. — Underwriters Laboratories (UL) announced a new certification program to help manufacturers of plumbing-related products demonstrate compliance with new, stricter low lead requirements that will be mandatory in California and Vermont starting Jan. 1, 2010.

UL's new certification program will test materials to demonstrate

Speakman goes lead free

NEW CASTLE, DEL. — CA AB 1953 (California) and S.152 (Vermont) are now in effect and are helping to transform the plumbing industry.

In response to this new legislation, Speakman, a quality leader in the commercial plumbing industry for 140 years, began converting its faucet products to lead free in early 2009 and to date have 85% of the plumbing products which should meet lead free compliance converted to lead free. The No Lead line, denoted by option "-CA" contains less than 0.25% lead while still maintaining the high quality expected from Speakman Products. "We believe it is extremely important to provide our commercial and institutional customers the same high level of quality and durability they have come to expect from Speakman in our No Lead line as with any other Speakman product without adding additional cost to our customers" stated Bill Walbrandt, the director of Commercial Plumbing for Speakman.

For info, visit www.speakmancompany.com.

wetted surfaces of plumbing fixtures, valves, fittings and pipes. Vermont has since adopted a similar standard.

Per the California Department of Toxic Substances Control, lead can be harmful to humans. Lead from plumbing products may be leaching into drinking water. The amount of lead in drinking water depends on a number of factors, such as how much lead is in the plumbing parts, how large an area of a lead-containing part comes in contact with the water, how long the water is in contact with the lead-containing surface, and how corrosive the water is. Exposure to lead can cause serious adverse health effects, including delays in physical and mental development.

Lead-free potable water products bulletin available from B&G

MORTON GROVE, ILL. — A new bulletin (A-151) describing the full line of Bell & Gossett lead-free potable water products is now available at www.bellgossett.com. Ranging from pumps and boosters to tanks and valves, the potable water products are offered in lead-free brass materials and meet the requirements of California's AB1953 and Vermont's S152 legislation, as well as exceed the current require-

ments in the other 48 states.

The new bulletin (A-151) explains how Bell & Gossett's expanding line of potable water products provides efficient, safe, and responsible lead-free operation. Products described in the brochure include:

- Commercial Pumps — (Series 60 AB, Series 90 AB, Series 1522)
- Circulators — (ecocirc™, Series 100, LR, NBF, SSF, PL, PD, LD3,

High-performance 2400 Series circulators designed maintenance-free

CRANSTON, R.I. — Taco's new, 2400 Series pumps are designed for quiet, efficient operation in a wide range of medium to high flow/head applications, including hydronic heating, chilled water cooling and hot water recirculation.

The space-saving, close-coupled,

The pumps are available in cast iron or stainless steel for a broad range of larger residential and commercial hydronic systems. Typical applications also include snow melt, high pressure drop boilers, outdoor wood boilers, geothermal heat pumps, primary/secondary loops and hydro-



maintenance free motor with permanently-lubricated bearings and carbon/silicon-carbide mechanical seal provide superb reliability for a wide variety of uses.

air fan coils. Stainless steel circulators — which meet California AB1953 and Vermont < 0.25% lead requirements — are well suited for open-loop domestic water recirculation systems.

WeAreLeadFree.net

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We are the brands of Watts Water Technologies.

In California and Vermont, after months of discussion, preparation and hard work the world has changed and Plumbing Professionals, Engineers and Do-It-Yourselfers are waking up to the new standard of Lead Free plumbing.

Today, we are Lead Free.

For more information or product ordering visit WeAreLeadFree.net or contact your local authorized representative.



Circle 38 on Reader Reply Card

Symmons Industries: trusted by plumbers for more than 70 years

Symmons is a third-generation, family-owned company that was founded in 1939. Since its inception, Symmons Industries has been a premier manufacturer of commercial and residential plumbing products. Known for its pressure-balancing, anti-scald shower valve, and durable commercial products, Symmons has been trusted by plumbing contractors for more than 70 years. In 2008, Symmons relaunched the brand and expanded

The following is an exclusive Q&A with Tim O'Keefe, CEO, Symmons.

What are your initiatives for the company?

O'Keefe: As the third generation of management my goal is to remain true to our commercial heritage and continue to create products that address the needs of the plumbing contractors and help them to drive their sales. Understanding the market and our customers will help us develop products that are relevant, cost-effective and solution-based.

I also have a big focus on business development, product innovation and long-term company strategy. I am engaging with developers, owners and management companies to continue enhancing our business diversification strategy.

Even in this economic climate, Symmons has introduced some new commercial products. Please describe them and what it means to Symmons to be front and center in the marketplace.

O'Keefe: Symmons is fortunate. As a result of our high quality and durable products, we've developed a loyal customer following, which has enabled Symmons to remain successful in these economic times. However, the changes in the economic climate have taught us some valuable lessons, and we've learned to adjust product offerings to the market demands. Our customer solutions, like the Symmons trim replacement kit, were created to make the

contractors more productive and provide them the opportunities for additional sales. The trim kit, for example, also provides the end user a product for bath renovations on a budget.

We strive to create products and solutions that will make our customers more successful and help grow their business.

Are there any contractor programs/incentives in place from Symmons?

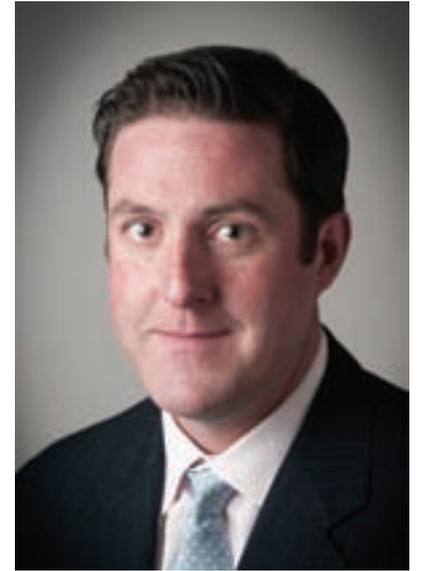
O'Keefe: We firmly believe in having incentive programs for all of our customer channels. We are open to ideas about programs and encourage all customers to contact their local Symmons representative to discuss such programs.

Is your company immersed in "green"? How?

O'Keefe: At Symmons, green is more than just our brand color. We are pleased to offer WaterSense®-labeled lavatory faucets. In fact, most of our premium bath fittings are available in low flow. As a WaterSense partner, we are continually looking for ways to help educate contractors and homeowners on the benefits and cost savings of installing low-flow products. We are currently testing our showerheads to the specifications set forth by WaterSense and hope to offer WaterSense labeled showerheads in early 2011. We've also changed some of our operating procedures for our offices and manufacturing facilities to be more environmentally friendly.

Please describe Symmons' new commercial bath suite?

O'Keefe: In today's market, we realized that creating products that are compatible with many uses and applications is the way to ensure sales. We've also learned that our de-



Tim O'Keefe

tion a good fit for hospitality properties, condominiums or medical facilities. The Dia Collection features a tub/shower system, lavatory faucets both widespread and single post, kitchen and bar faucets. The full line offering of the Dia Collection addresses the needs of any commercial project.

What are contractors looking for as far as style and functionality in bathroom fixtures?

O'Keefe: Durability, timeless design and easy maintenance are the main things that contractors are seeking when purchasing new products. Timeless and transitional designs that can be installed in almost any type of bath are appealing to the



The new Dia™ Collection from Symmons is complete with tub/shower systems featuring the Symmons pressure-balancing, anti-scald valve.

its product offering to include premium products for kitchen and bath. In 2002, Symmons introduced The Design Studio and continues to innovate within the custom fittings category, creating distinctive design solutions for premium hospitality and condominium projects.

Symmons offers a variety of durable, reliable and beautifully designed plumbing fittings for residential and commercial applications.



Symmons features its popular Museo Collection lavatory faucet in polished graphite.

signs must be timeless and transitional to match any décor. Our customers need to have product flexibility in combination with good quality, which is why we created the Dia Collection. The Dia products features a minimalistic design to match any décor, which makes the collec-

contractor because they can rely on one product or brand for many applications. Maintenance requiring only a few parts is another priority for the contractor because it limits the need to have large quantities of on hand inventory.

(Turn to Symmons... page 60.)

American Hometec's Coilless Technology takes tankless to new level

BY DAVE MILLILO

Tankless water heaters have been popular in Europe for decades and are now gaining



The AHQ-T16 model is a versatile unit that serves a sink and a shower at the same time — an ideal solution for homes, apartments, hotels and townhomes.

more and more interest in the U.S. due to their energy and water conserving qualities. But, not all tankless water heaters are created equal. American Hometec, a new manufacturer of tankless water heaters, uses a patented Coilless Technology for electric tankless water heaters. The company's innovative Coilless Technology takes water heaters to the next level as it heats water in a different way — indirectly through unique heat transfer for increased efficiency and water conservation.

Other electric heaters on the market immerse coils directly in the water in order to heat it, causing heat spots, which produce build-up of lime scale and a decrease in heating efficiency. Because there are no coils with American Hometec's new technology, the electric components are never in direct contact with the water being heated, preventing accumulation of lime scale inside the unit and increasing longevity of the unit. With Coilless Technology, you can be confident that the heating element won't break down due to lime scaling buildup, relay switches won't malfunction and there won't be cor-

rosive water damage.

Coilless Technology is the most advanced tankless water heating technology available today and it makes American Hometec a pioneer in the industry. The new technology maintains efficiency at the design level of 95 to 99 percent throughout equipment lifetime, it's free of lime scaling issues and suitable for all water conditions. In addition, American Hometec backs its units with a 15-year lifetime limited warranty on the coilless heating element.

American Hometec has brought something that is brand new to the market and has changed the game in water heating. Combining the benefits of hot water on demand with a this new, long-lasting technology,

t a n k l e s s water heaters that feature our patented Coilless Technology are the next generation in the industry.

American Hometec is in the process of introducing a complete family of tankless water heaters ranging from low-flow single use units to higher capacity units suitable for both residential and commercial applications. All of the company's electric tankless water heaters will feature the patented Coilless Technology. All units are designed to be compact in size and modern-looking for installation in almost any dwelling space, saving valuable floor space in commercial buildings, single-family homes, condominiums, schools and apartments.

Earlier this year, the company introduced its AHQ-C10 electric tankless water heater for low flow multi-lavatory and single use applications such as: sinks in lavatories, restaurants, schools,

labs and hotels. Unique to the C10, three capacity settings — 4.2, 6.4 and 8.5 kW — are available within one unit, which means the C10 unit can handle multiple needs by acting as three units in one. This exclusive design therefore reduces inventory cost, saves space and provides a great deal of convenience to both distributors and contractors.

The next unit to be introduced to American Hometec's series of units will be the AHQ-T16, an electric tankless water heater for mid-range hot water demands such as the average-sized bathroom. The unit will provide the versatility to heat a sink and shower simultaneously, and will offer a continuous, precise temperature-controlled hot water supply. The new unit will also feature a sleek design, modern blue LED smooth touch temperature control panel and an easy-clean surface that is unsusceptible to damage from dirt or moisture.

American Hometec's tankless



The AHQ-C10 tankless water heater from American Hometec is ideal for single or multiple low flow sinks in houses, restaurants, schools, labs, hotels, etc.

water heaters are available to plumbing supply and HVAC wholesalers. For more information about the company, its products and Coilless Technology, visit www.AmericanHometec.com. ■

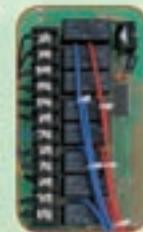
Dave Millilo is vice president of marketing for American Hometec.

The Benefits of Coilless Technology



Coilless Technology®

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Smooth Start Technology™

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- Eases Power Ramp-Up
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- Maintains Power Quality



3-in-1 Technology™

- 4.3, 6.4 or 8.5 kW
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- Multiple Installation Options
- 3 Capacities in One Unit
- Reduces Inventory Costs
- Application Flexibility
- Reduces Installation Costs



LED Display

- Easy to Read and Understand
- Intelligence Codes Displayed (errors, notifications, etc.)
- Soft Touch™ User Interface

Symmons Industries: the plumber's choice

(Continued from page 58.)

Please describe your foray into the pressure balancing and anti-scald valves.

O'Keeffe: The anti-scald and pressure balancing technology serves as the foundation of our company, as it was developed by Paul Symmons in

the early 1930s. He speculated that the problem of drastic temperature change in the shower was caused by a change in water pressure. He observed that when pressure demands were made elsewhere in a plumbing system, turning on a faucet or flushing a toilet, would cause a tempera-

ture change occurred in the shower. The final result was the Temptrol valve design that not only solved the problem of water temperature fluctuation, but also revolutionized the plumbing industry. Since 1939, Symmons Industries, Inc. has been producing pressure balancing shower



The Dia Collection square single post faucet

valves to prevent scalding incidents. The original technology is encompassed in the Temptrol valve.

Since the expiration of the patent in 1960, Symmons has maintained its leadership position as the safest, most reliable shower system manufactured. Every assembly is tested to maintain uncompromised performance and reliability. Symmons still manufactures a durable bronze, brass and stainless steel valve.

In 1974, Massachusetts became the first state to mandate the use of safety-type valves in all showers. As a result of the legislation, Symmons has the majority of installations in houses, hotels and commercial buildings in Massachusetts. Over the next several decades, the remainder of New England and many other states adopted similar codes to protect bathers.

My goal is to remain true to our commercial heritage and continue to create products that address the needs of the plumbing contractors and help them to drive their sales.

— Tim O'Keeffe, CEO, Symmons

Today, Symmons is proud to be able to offer many beautiful designs for the shower trim, all of which are compatible with the original Symmons Temptrol valve.

How do the valve work?

O'Keeffe: When the valve is turned on, both hot and cold water exert pressure on opposite ends of this piston, holding it in a balanced position. If the hot water pressure drops, the piston reacts and reduces the cold inlet opening. The pre-selected shower temperature is maintained by instantly and continually balancing the hot and cold water pressure, even when the water supply changes drastically. By maintaining the same hot to cold water ratio in the shower, the Symmons valve prevents injuries that can result from a quick reaction to unexpected temperature changes otherwise known as "shower shock." ■

HEATINGHELP.COM

GREENING STEAM

How to Bring 19th-Century Heating Systems into the 21st Century (and save lots of green!)

By Dan Holohan

NEW

GREENING STEAM

How to Bring 19th-Century Heating Systems into the 21st Century (and save lots of green!)



Dan Holohan

Available at
HeatingHelp.com

“When it comes to saving dollars on heating, old steam systems are delicious low-hanging fruit. There is so much you can do to make them better, and most of what you do won't cost a fortune.”

Dan Holohan

Circle 50 on Reader Reply Card



On-demand tankless water heaters

These tankless water heaters for on-demand, point-of-use commercial and industrial applications include a patented microprocessor technology that can be preset to a specific temperature to prevent scalding. It is self-cleaning, so there is little maintenance required. The units are only operational when hot water is requested at 99% energy efficiency, thereby reducing hot water delivery time. Compact — the size of a standard dictionary. **Chronomite.**

Circle 101 on Reader Reply Card

Upflush toilet

The versatile line of SANIMARIN upflush toilets from combines comfort, efficiency and reliability while eliminating the excessive noise associated with vacuum-operated



or hand-pump units. Three models, all specially designed for marine applications, feature an easy-to-operate, push-button control panel with no bothersome hand-pumping required. Installation can be adapted to suit any plumbing configuration and all types of boats. SANIMARIN models operate with either an on-board, pressurized, freshwater system; or with a raw-water system that requires a separate seawater pump. **SFA Saniflo Inc.**

Circle 102 on Reader Reply Card

Tankless water heater installation kits

E-X-PTM Complete contains all the peripheral components required to install a tankless water heater. Available with your choice of three different



service valves and include a 200,000 Btu pressure relief valve, gas flex line, two braided water connectors, and CGA gas ball valve. Help keep your inventory simple or customize to meet a specific need. **Webstone.**

Circle 103 on Reader Reply Card

★ Phc News product of the month ★



Push-fit stainless steel drainage system

New generation Push-Fit stainless steel drainage system is manufactured of austenitic grade 316L stainless steel. Company offers a complete system of pipes, fittings, hanging accessories and drains. Pipes and fitting are available in 1½" through 8" sizes and with different gasket materials to suit different product applications. The push-fit feature of the system enables engineers and installers to obtain all the benefits of stainless steel while reducing the cost of the overall installation. **Josam.**

Circle 100 on Reader Reply Card



Instantaneous heat fixtures

This line of heat faucet, hot shower and water heater is applied with Porcelain — Energy Technology™. This one-of-a-kind porcelain heating system is installed inside the faucet. Porcelain can transfer more than 1,200° Celsius (2200 °F) of heat into the cold water and makes hot water instantly. The efficiency rate of the products is 98% with thermal efficiency losses almost to zero. Features are: unique, compact in sizes, safe and reliable, energy and water saving, overcome the worries from the old traditional water heating products. **Kukel.**

Circle 104 on Reader Reply Card

Hybrid flex inverter heat pumps

New 4-ton, 15.5 SEER Fujitsu Halcyon HFI Hybrid Flex Inverter system is a cross between VRF (variable refrigerant flow) and multi-zone technology. Company offers 7, 9, 12, 18 and 24,000 Btu wall-mount units; 9, 12 and 18,000 Btu cassette units;



and 9, 12, 18 and 24,000 Btu concealed ceiling units — all of which can connect to a single, 4-ton outdoor unit. This allows for as many as eight separate zones and 3,266 combinations. The system provides connectible capacity from 80% to 130%, from 39,000 Btus to 62,000 Btus, enabling the system to provide 48,000 to different areas of the building when other areas are not in use. **Fujitsu.**

Circle 105 on Reader Reply Card



Avalanche toilet

Two additions to the high-performing Avalanche toilet line are the 1.28 LS and gravity one-piece toilets. Now available in one- and two-piece options, the company's most sophisticated and powerful single flush gravity-fed toilet, the Avalanche 1.28 uses only 1.28 gpf versus the industry standard 1.6 model. According to the EPA, using an HET unit (in place of a 1.6 gallon flush toilet) can save a minimum of 20% annual water savings. For the average family of four, it can save up to 8,760 gallons of water each year. **Gerber.**

Circle 106 on Reader Reply Card

0.8 gpf toilet

The ultra-high-efficiency (UHET) Stealth toilet is EPA Water Sense® certified and the first and only toilet available that can achieve a powerful, quiet flush using just 0.8 gallons of water. Also, the three-part Stealth System also features a high-efficiency, high power showerhead with three unique flow options and an aerator, resulting in an unrivaled product combination that can save a homeowner up to 40,000 gallons of water per year and up to \$600 off their utility and water bills. **Niagara Conservation.**



Circle 107 on Reader Reply Card

BIM files enhance Navigator® TMV

As Building Information Modeling (BIM) revolutionizes the plumbing in-



dustry, comprehensive BIM files built with Revit software support line of Navigator® Thermostatic Mixing Valves. The only thermostatic valve company offering this service, BIM files contain rich pools of data to assist in specifying projects. **Bradley.**

Circle 108 on Reader Reply Card



Cast iron roof drains

New, versatile 20" large-capacity roof drains are available with 10" and 12" no-hub connections. A 15" model, recently introduced, is used in most standard roof drainage applications; the 20" model is for large-capacity or high-volume applications. Several options can be ordered to customize the drain such as under-deck clamp, sump receiver and 2" cast iron external water dam for overflow applications. **Sioux Chief.**

Circle 110 on Reader Reply Card

Automatic balancing valves



Two new Low Flow Automatic Balance Valves feature a unique field adjusted cartridge that allows the user to select exact flows for specific applications. The Low Flow Circuit Sentry™ and the Low Flow Wye-Strainer are designed for automatic flow-limiting style balancing of both HVAC cooling & heating circuits and are ideally suited for small coils that keep constant fluid flow. **Bell & Gossett.**

Circle 111 on Reader Reply Card

Hydronic controls

Optima Series hydronic controls work with Prestige Boilers for total hydronic system control. Installers can specify these controls utilizing packaged wiring and piping diagrams to speed system design and installation. Four



controls integrate the boiler seamlessly with other heat sources such as solar or geothermal systems to optimize efficiency. Also, controls are used to connect and control up to 16 boilers with full modulation, outdoor reset and lead-stage rotation. Parallel modulation allows all connected boilers to modulate together at lower firing rates to maximize system efficiency. **Triangle Tube.**

Circle 112 on Reader Reply Card

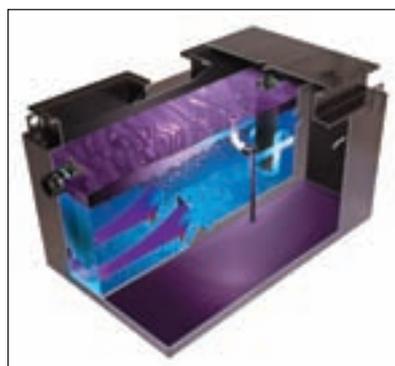
★ Phc News product of the month ★



Heat transfer appliance for commercial solar hot water

The Commercial Solar Station (HCOM) is a packaged closed-loop heat transfer appliance for accommodating large solar hot water projects of up to 100 flat plate collectors with a single module, while still larger projects can combine modules in parallel for limitless sizing potential. The HCOM plug and play appliance can work universally with any commercial project reducing all the design complexity time associated with larger installations. The HCOM operates on the same principles as Heliodyne's line of residential closed loop heat transfer appliances, the Heliodyne. Some notable features of the HCOM include "plug and play" installation, touch screen interface, advanced controller for remote Wi-Fi based monitoring and data storage, single/double wall heat exchanger and integrated variable speed pumps for system energy optimization. **Heliodyne.**

Circle 109 on Reader Reply Card



Oil/sand separators

Redesigned SIT and SOS series of steel oil/sand separators are available in two construction configurations to fit your specific jobsite application. The improved units offer greater flow rates, larger storage capacities and integral storage. Designs incorporate Diffusion Flow™ technology for the greatest separation efficiency on the market. **Schier Products.**

Circle 113 on Reader Reply Card

Scale reduction for tankless

OneFlow OFTWH is cost effective and proven technology to ensure



scale-free operation for tankless water heaters. New, environmentally friendly technology prevents scale formation and is virtually maintenance-free. Transforms dissolved minerals into harmless, inactive microscopic crystal particles, which travel through plumbing systems without attaching to pipes, fixtures, valves or heating elements. **Watts.**

Circle 114 on Reader Reply Card

Smart control enhancement

Enhanced SMART SYSTEM user interface provides a greater level of control than before with easier access to all of the information needed to set up, troubleshoot and monitor



all equipment functions. Equipped with several new advanced features, SMART SYSTEM is now standard on all KNIGHT® residential heating boiler models, as well as the KNIGHT® XL Commercial Boiler and the ARMOR® Commercial Water Heater. **Lochinvar.**

Circle 115 on Reader Reply Card

3-hour fire-stop modular seals

Innerlynx® seals are composed of proprietary rubber where fire resistance is a must. Two seals must be in place for UL approval. Form a



mechanical seal between pipes going through walls, floors and pipeline casings, Designed to be installed quickly and easily by one worker with no special training. Non-conductive and isolating, made from synthetic rubber with heavy-duty, plastic pressure plates.

Sixteen different sizes of Innerlynx® are available for most pipe sizes with diameters ranging from 1/2" to 120". **Advance Products & Systems.**

Circle 116 on Reader Reply Card

Condensing boiler

The "Bimini Buddy" is an optional accessory to go with its line of wall-mounted Bimini Buddy condensing boilers. The Bimini Buddy is available in



three models: a combi-unit that has a brazed plate heat exchanger for domestic hot water, an indirect unit



with connections for an indirect water heater and a heat-only unit. All Bimini Buddies will come jacketed and include a hydraulic separator. **Crown Boilers.**

Circle 117 on Reader Reply Card



An all-in-one laser solution

The PMC 46 Combilaser offers a full solution in one kit, allowing professionals to reduce the number of tools and accessories they carry while still being able to meet all application needs. For leveling, aligning, plumbing and squaring applications, the tool features Pulse Power™ technology for reliable, accurate measurements at the touch of a button. 20-hour battery life keeps it ready to go for all-day productivity. Innovative Impact Protection System and rubberized drop points add durability to maintain accuracy and production in tough conditions. **Hilti.**

Circle 119 on Reader Reply Card

Hot melt glue gun

Available in an extrusion model, the HB 710 HT hot melt applicator can be used in dot or bead applications. Micro-processor controlled, automatic temperature reduction system delivers optimum amounts of adhesive on heat sensitive materials. A short response time assures quick, safe application. Key to performance is the pneumatic assistance given for applying adhesive. **PAM Fastening Technology, Inc.**

Circle 120 on Reader Reply Card

11 in 1 Screwdriver

With its patented ECX™ bit and hardened tips, the Milwaukee® 11 in 1 Screwdriver was developed for the



professional user. Prevents bit wear from hardened screws. No need to carry multiple drivers, the 11 in 1 comes complete with 9 fastening functions including #1 Phillips, #2 Phillips, 1/4" slotted, 3/16" slotted, #1 ECX™, #2 ECX™, and 1/4", 5/16" and 3/8" nut drivers. An integrated wire stripper and wire bending hole allow the user to strip and/or bend up to 12 gauge wire. **Milwaukee Tools.**

Circle 121 on Reader Reply Card

★ Phc News tool of the month ★



RIDGID® Tailpiece Extension Cutter

The RIDGID® Tailpiece Extension Cutter saves users time and material costs by making a clean, fast, and straight cut with one tool on polyethylene (PE), polypropylene (PP), and thin-walled PVC plastic tube used in sink drain extensions and tailpieces. The Model P-TEC 2550 cutter provides a contained, auto-fed cutter for the standard sizes of 1 1/2" and 1 1/4" outer diameters. The automatic deburring feature eliminates the need for a second tool. **RIDGID.**

Circle 118 on Reader Reply Card

Typhoon™ trailer jet

Features a variable speed controller for easier hose handling of the 400 ft. capacity jet hose reel. The Typhoon delivers 12 gpm at 2500 psi to blast lines clean of grease, sediment and debris in big lines and long runs. A 200-gallon holding tank carries enough water to handle remote applications where access to water is limited. **General Pipe Cleaners, a division of General Wire Spring.**

Circle 122 on Reader Reply Card

Camera inspection system

The New EelCam EC-8SD Camera Inspection System offers users a highly portable and rugged system which features a digital recorder that records video of the inspection directly onto a SD (Secure Digital) flash card. The EC-8SD control unit is housed in a compact and rugged carry case, which weighs only 10.4 lbs. and includes controls for microphone, lights, camera test port, and secondary video and audio outs. Date, distance and time are displayed on screen, and a keyboard for adding text is included. A 1.3" diameter color camera with 512 Sonde is standard on the EC-8SD, along with 200 ft. of premium Gel Rod push cable. **Electric Eel Mfg. Co., Inc.**

Circle 123 on Reader Reply Card



Saddle box

All-steel, low-profile saddle box is secure, durable and convenient to use; maximizes visibility, enhances safety. Two sizes to fit both full-sized and compact pick-up trucks. Heavy-duty construction has a powder coat finish in either black or white. Installation is quick and easy with crimp-free/drill-free mounting brackets. Features an EXTREME PROTECTION™ lock for security. Meets all conditions and a weatherproof power cord pass-through permits easy access for tool recharging. **WEATHER GUARD.**

Circle 124 on Reader Reply Card

High brightness light tool

The 957 LED Pro Light is a fully rechargeable LED flashlight with 1000 lumen output. Sturdy aluminum, water-resistant case has an anti-slip grip design. Extreme high brightness LED light consumes much lower energy than equivalent bulbs, providing runtimes of up to 1 hour on HIGH and 3.5 hours on LOW. Twist-ring control for high/low modes and 4X spot or 1X flood operation. **Bluestone Lighting.**

Circle 125 on Reader Reply Card

Brick and mortar saw

With its patented Allsaw™ technology, the AS170 saw offers extreme levels of precision, accuracy, control,



and safety. Unique orbital cutting motion with two forward facing blades combine to perform hammering and cutting action for clear visibility and accurate, square, deep cuts. Weighs 9.5 pounds, has a cutting depth of 4 3/4" and a cutting width of 1/4". Features a powerful, 13-amp motor with a dust-resistant, heavy-duty design for long motor life in the toughest environments. **Arbortech USA.**

Circle 126 on Reader Reply Card

IAPMO green code supplement ushers in new era

Forward-looking document enables municipalities to take lead on sustainable building initiatives

The sustainable building industry has a powerful and revolutionary new tool at its disposal with the formal release of IAPMO's Green Plumbing and Mechanical Code Supplement, the most comprehensive document ever cre-

"The biggest void in the industry is how to safely use alternate water sources," said Viola. "Inspectors and code officials think it's best to avoid using graywater because they're very conservative and feel it's best to avoid the risk of something bad hap-

cludes setting minimum appliance efficiencies, enhancing insulation provisions and establishing design criteria that minimize water waste while waiting for hot water to arrive at the tap.

Energy conservation in HVAC systems

Though provisions dealing with sustainable plumbing are prominent, Amir Tabakh, director of Environmental Engineering, Environmental Affairs Division of the City of Los Angeles Department of Water and Power, and a member of the GTC, contends the mechanical aspects should not be overlooked. "According to the California

Energy Commission, 30 percent of the state's energy consumption within commercial buildings is mechanical equipment," said Tabakh. "If that 30 percent is positively impacted, it means many more electrical systems will become highly efficient. So, this document ultimately touches national standards for electrical efficiency."

The Supplement achieves a significant reduction in energy use for heating, ventilation and air-conditioning systems from that permitted by mechanical codes. In most cases, the reduction is more than 20 percent. The cornerstones for these provisions are ASHRAE 90.1-2007 Energy Standard for Buildings Except Low-Rise Residential Buildings and ASHRAE 90.2-2007 Energy Efficient Design of Low-Rise Residential Buildings.

Training/education in green plumbing systems

"The existing infrastructure for training professionals lacks the green element," said Viola. The Green Supplement recommends that jurisdictions look for examples of specific competency from professionals involved in designing, installing, and inspecting green systems.

The Green Supplement was developed in response to the IAPMO Board of Directors' call for a reduction in energy and water consumption currently permitted in the Uniform Codes. In January 2008, the Board established the GTC and charged these individuals with the development of the Green Supplement. The 25-member GTC is chaired by IAPMO Board Member Bill Erickson of CJ Erickson Plumbing and comprised of the leading authorities in all facets of

the sustainable plumbing and mechanical fields. Operating under the leadership of the GTC, an additional 60 members that include plumbers, contractors, engineers, inspectors and energy/water conservation experts serve on nine task groups.

The Green Supplement serves as an invaluable resource for code officials, plumbers, contractors, engineers and manufacturers in designing, installing and approving more sustainable plumbing and mechanical systems. Among its features:

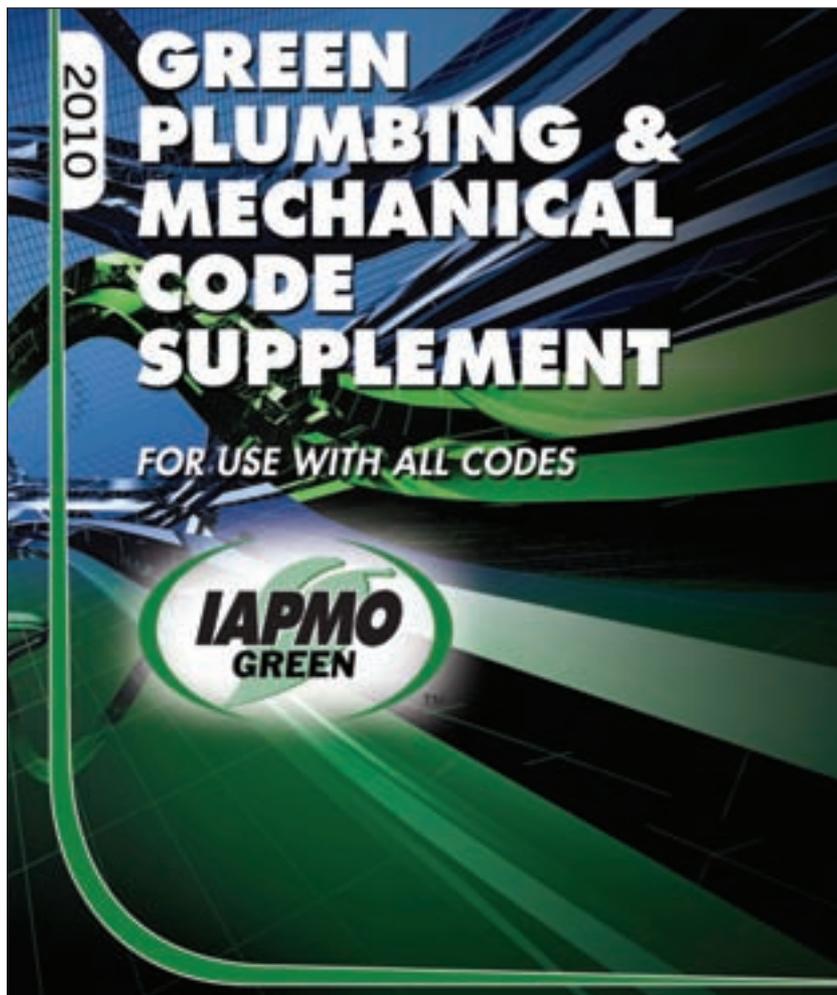
- Provides the most comprehensive collection of plumbing and mechanical provisions available toward increased water and energy efficiency;
- All provisions contained in the Green Supplement are proven safe and reliable;
- Provides related installation and maintenance requirements; and
- Where possible, the Green Supplement provides commentary detailing the water and energy savings associated with the provisions detailed within its language.

"Many of the provisions in the Green Supplement are very advanced," said Tabakh. "These standards are 5-7 years ahead of the local codes. As you know, a code cycle takes 3-5 years and we cannot wait for products that are advanced or highly sophisticated before they are approved by the code. The Green Supplement gives a local jurisdiction the opportunity to adopt a superior product, a superior standard without waiting 5-7 years."

The Green Supplement is designed as a transitional suppository for these concepts that are perceived as being ahead of their time. The end game, according to Viola, is ultimately for the supplement to go away as Green becomes the mainstream industry standard and these provisions are rolled into the codes.

With the Supplement complete, the Green Technical Committee has fulfilled the next step of the Board charge by submitting proposals that would incorporate the applicable portions of the Green Supplement into the 2012 Uniform Plumbing Code and 2012 Uniform Mechanical Code as non-mandatory appendices. ■

Geoff Bilau is senior writer, marketing & communications for IAPMO. For more information about the Green Supplement and/or IAPMO's commitment to a sustainable environment, visit www.iapmo.org/Pages/IAPMO_Green.aspx or contact Maria Bazan at 708-995-3000 or maria.bazan@iapmo.org.



ated to standardize sustainable residential and commercial plumbing and mechanical systems.

"The building codes are perhaps the biggest hindrance to the adoption of green buildings," said Dave Viola, IAPMO director of Special Services and staff liaison to the Green Technical Committee (GTC) that developed the document. "There's so little information about how to do green systems properly and safely within existing building codes, so we've rolled out a document that shows exactly how it's done."

The Green Supplement serves as a complement to any adopted plumbing and mechanical code, smoothly bridging the previously troublesome gap between existing codes and established green building programs. Where code language and green building concepts lack cohesion, the Green Supplement creates harmony by addressing such areas as the use of alternate water sources (graywater, rainwater harvesting).

pening." Many green building rating systems give points for using alternate water sources, but they don't prescribe how to use the graywater correctly. "That's where the supplement fits in. We show you how to replace potable water, earn your points, and do it safely."

Proper use of high-efficiency plumbing products

With water conservation comes the potential for drain line clogging. The Supplement establishes more efficient flow rates and consumption limits for plumbing fixtures, faucets and appliances while providing product specifications and installation requirements necessary to achieve the necessary performance and anticipated water savings.

Conservation of hot water

The Supplement contains measures to increase the efficiency of hot water generation, hot water distribution and hot water usage. This in-

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Alternative energy: We're going kicking and screaming

BY JIM SCHAIBLE,
Managing editor

I've loved motorcycles since I was five. In 1974 I finally bought one, a well-used '72 BSA B50, a 500 cc single-cylinder "thumper" that was a

challenge to operate but a blast to ride. It was among the last of the BSAs built as that once-dominant, fine old English manufacturer slid into extinction.

My life has taken some dramatic twists and turns since 1974, but I still have that old "Beeza." A network of dedicated suppliers and dealers has the parts I need to keep it running. Despite the times the bike has spit me off, we've become comfortable old friends. I still love riding it, but lately I've been looking at its biggest drawback — based on 1950s technology, it's a gross polluter. It spews CO, NO_x and unburned hydrocarbons like an old tractor, and the mechanical clatter from the engine rates as genuine noise pollution. I guess it's a factor facing everyone who operates antique vehicles. We do our best to make up for it by owning newer, low-polluting vehicles for everyday transportation.

Recently, however, the motorcycling media has been reporting on a small but growing movement toward electrics. Not hybrids, but all-electric motorcycles. The technology is in its infancy, but already an electric racing bike has lapped the famous Isle of Man race course, all 38 miles of it, at an average speed of 87 mph, clocking 102 over one stretch. It did this almost silently and emitting no pollution. Several small, start-up manufacturers already offer all-electric motorcycles at retail. They're mostly off-road playbikes and small commuters, all with limited range, but it's a significant beginning.

What I'm getting at here is that the alternative-energy market has legs. A few electric motorcycles indicate a much larger, and potentially unlimited, market in alternative energy of all types. Naysayers

abound, mostly with political agendas, but among the ranting from the political right and the happy-talk chatter from the left is the solid fact that serious research is beginning in an effort to wean this nation from fossil fuels.

One argument is that batteries can't supply the kind of energy fuels do, and that is true. Or is it? Tesla Motors, manufacturer of the Tesla Roadster, is proving that advanced lithium-ion batteries can power an all-electric, high-performance sports car to a range of 245 miles between charges.

Delivery trucks, which consume the bulk of their fuel during acceleration, deliver significantly improved economy from diesel-hybrid technology.

Battery research is aimed at greater density and faster charging. Solve those problems and all-electric vehicles become practical, and you can bet there's a serious race on to do just that. Imagine the market for practical battery power.

Couple practical batteries with efficient photovoltaic (solar) cells, and there's zero everyday operating costs for a vehicle. I know this sounds like pie-in-the-sky dreaming, but plenty of earnest, knowledgeable people believe it can happen and are working toward it.

Already, solar energy is a growing market. Sadly, the American market has fallen behind the Chinese and Europeans in utilizing alternative energy of all types. The Germans aren't waiting to determine whether solar cells are practical for normal use; they're installing kilometers of them in their power grid. The Chinese, seeing a vast market, churn solar cells and collectors out by the millions, undercutting American manufacturers.

No matter who makes them, solar collectors of all kinds are at the vanguard of a huge movement toward sustainable energy. Detractors claim that the United States generates less than 2% of its power with alternative sources, but that's because we haven't yet dedicated ourselves to doing more. The state of Iowa generates 14% of its electric power via wind turbines, and that's a significant amount. A small but growing group of contractors, largely in the Southwest, spe-

cialize in solar installations for DHW and space heating, and cooling as well. Their efforts point the way; there's no reason buildings everywhere can't gain considerable benefit from solar energy. Someone has to specify and install the products for this movement; it might as well be you.

As I write this, British Petroleum is trying to stop the disastrous oil leak from one of its deep-sea wells in the Gulf of Mexico. The effort shows signs of success, but the event clearly illustrates the Devil's bargain we've made with fossil fuels. We either buy them from unstable, repressive, antagonistic nations, or we pump it from the seafloor and risk hundreds of miles of delicate coastline and the livelihoods of coastal residents. Sure, there are plenty of fossil fuels to be had, but they are increasingly difficult and expensive to obtain in monetary, political, environmental and human costs.

Alternative energy is win-win. Every installation reduces the amount of fossil fuels used for heating and power generation and saves it for things like aircraft, trains and over-the-road trucks, which so far need liquid fuels.

My point to all this rambling? Alternative energy is here to stay and represents a quiet revolution. While politicians and pundits blaviate, level-headed researchers and businesspeople are developing the technology and the market. One day, maybe not far off, we'll be buying all-electric, solar-charged vehicles and specifying all-solar heating and power systems for our buildings. This industry stands to gain a tremendous amount and can either get out in front of the parade or clean up after the elephants. ■

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- *High-Efficiency Toilets*
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