



HOW SPF AND HVAC CONTRACTORS SHOULD WORK TOGETHER

BY FIONA SOLTES



There's an old joke about the way HVAC contractors once sized equipment before an installation: If they stood 100 feet from the house and held up their fingers, a structure that could be blocked from view by three digits would take a three-ton system, and one that required four digits would take a four-ton system.

That might work out now and again, but the reality is that choosing the right size HVAC is a more complicated process—and when that process isn't properly followed, problems such as odors can be the unfortunate result.

"I believe—and espouse in each of my training presentations—that every spray foam contractor should be joined at the hip with an HVAC contractor," said Mac Sheldon, industry veteran and founder of Sheldon Consulting. "They need to work together, and they need to make sure the homes they're responsible for are done well, done right."

At the close of 2016, members of the Spray Polyurethane Foam Alliance (SPFA) met with members of Air Conditioning Contractors of America (ACCA). The informal gathering served to discuss common challenges and build relationships going forward.

"There were no particular issues that precipitated the meeting," said Rick Duncan, SPFA technical director. "But a common complaint we get about spray foam is the odor issue. It doesn't happen a lot; a small percentage of the jobs result in odors related to the foam, and it is often due to improper or inadequate ventilation."

In some cases when spray foam is used to insulate a house, Duncan said, it seals the house up so well that it prevents the natural air exchange needed for maintaining air quality.

"The odors from hundreds of thousands of products in the house will accumulate: carpeting, paint, and one of the biggest culprits, furniture," Duncan said. "If you have a leaky house, and it's not very air efficient, the natural air movement in the house will remove odors. But with spray foam, you don't have significant natural ventilation."

To make matters worse, an HVAC contractor who sizes a system for a house insulated traditionally with fiberglass or cellulose will often oversize, perhaps not recognizing that spray foam can save 25–30 percent of heating and cooling energy. Whether new construction or retrofit, the HVAC contractor should be aware spray foam will be used—and should plan accordingly.

Barton James, senior vice president of government relations for Air Conditioning Contractors of America, attended the meeting last year. The overarching issue for ACCA is the recognition of quality installation to ensure energy savings, comfort, air quality and safety. A study by NIST, the National Institute of Standards and Technology, showed that most homes in the U.S. used 30 percent more energy than they should, because their HVAC systems were not properly installed.

"There are 6 million residential HVAC sales in the country each year," James said. "So this is big business. The rule of thumb for homes is that generally they have equipment that's twice the size it needs to be, and their ducts are half the size they need to be. This equals a 14 SEER system is operating at 8–10 SEER. When you add into the mix all the wonderful properties of spray foam insulation, resulting in tighter homes, the oversized HVAC and undersized and leaky ducts are only compounded."

As a result, he said, it's critical for HVAC-R contractors and spray foam contractors to coordinate on projects to ensure happy and safe customers.

"It's really important that we work together, and have knowledgeable people on both ends, from the insulation side and the HVAC side," he said. Associations like ACCA and



SPFA often are a great place to find those quality contractors. That's not to say someone who isn't part of an association doesn't do quality, reputable work; they may simply not have joined yet. ACCA has over 4,000 member companies, and those companies do about half of the work in the U.S. each year, so it certainly is a great place for the consumer to start. "Otherwise," he said, "the consumer is really risking their investment, when they blindly hire one of the 650,000 people the U.S. Department of Energy estimates are employed in HVAC-R industry."

Those part of the association, James said, tend to be focused on improving the industry as a whole; heating and air conditioning equipment is the

largest consumer of energy nationwide, accounting for roughly 50 percent of a home's total energy consumption, so ensuring proper sizing and installation can have a significant impact. This equipment is also the single largest home investment, with a lifespan of 10-15 years, so getting the installation correct is essential to maximizing the investment.

Other resources include the likes of RESNET (the Residential Energy Services Network), and BPI (Building Performance Institute). RESNET auditors, for example, will work with insulation contractors and HVAC contractors to do proper testing and make appropriate best practice recommendations, in addition to measuring home energy

efficiency through the Home Energy Rating System (HERS) Index.

"As a best practice, we recommend contractors work with someone who knows how to diagnose a house," Duncan said. "What we don't like to see is a contractor installing spray foam in an existing home without knowing the air exchange in the home before and after the installation. This can lead to odor or ventilation problems that may need to be corrected."

As for consumers, they often have no idea what's needed—with either spray foam or an HVAC system.

"Ninety percent of HVAC replacements happen at the point of breakdown," James said. They're also usually in the hottest—or coldest—parts of the year. "That lends itself to consumers making bad decisions." They may assume they need the same size system as the one they're replacing—even if conditions have changed, such as the addition of a new roof, replacement windows or spray foam. Then there's the "guy factor," as James puts it, where bigger and stronger is always better—even if it's really not.

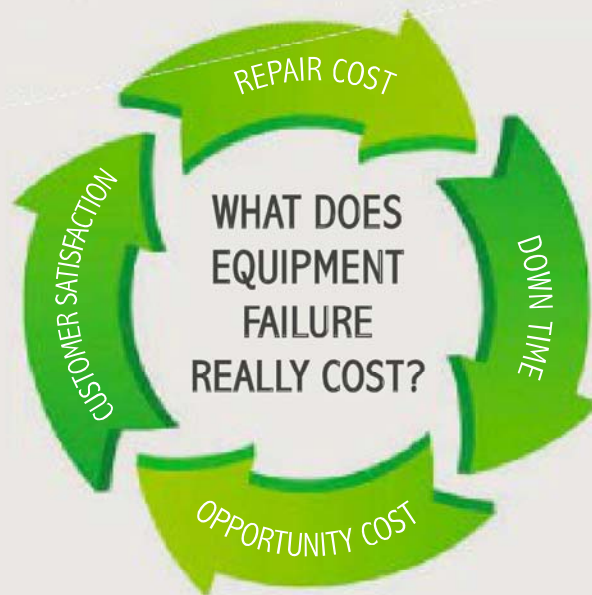
As a result, ACCA also pushes for onboard diagnostic equipment to be rule of thumb—among other requirements.

continued on page 28

“I believe—and espouse in each of my training presentations—that every spray foam contractor should be joined at the hip with an HVAC contractor,” said Mac Sheldon, industry veteran and founder of Sheldon Consulting.”

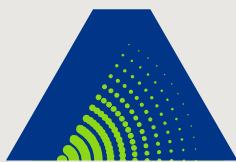


ARE YOU EARNING OR BURNING?



WANT TO IMPROVE YOUR BOTTOM LINE? BREAK THE CYCLE

Spray Foam
Equipment



**AKURATE
DYNAMICS**
The Science In Spray Foam

Designed
Not to Fail

832-672-5665 // info@akuratedynamics.com // akuratedynamics.com
7618 Bluff Point Dr, Houston, TX 77086

continued from page 26

ACCA's HVAC Quality Installation Specification (ANSI/ACCA 5 QI-2015), based on manufacturer recommendations, covers proper sizing, load calculations, duct leakage, airflow delivery and refrigerant charges.

Then there's Manual J, also known as Heat Load Calculation or Cooling Load Calculation, a protocol for sizing equipment that has been used by professionals for decades.

Sheldon, for example, who was a heating and air contractor for 15 years, was one of the first in his area to use

Manual J calculations, and said he learned early on how insulation and HVAC impact each other.

"So we would run a Manual J calculation, and builders would say, 'Oh, yeah, we've got great insulation. I'm going to have R-30.' Or R-40, or whatever they were proposing. And we'd calculate our equipment and ducts accordingly, but sometimes it wouldn't work well. We'd have hot rooms, cold rooms and just generally undersized systems, and I was perplexed. Even though it was the last thing I wanted

to do, we too started oversizing systems to make sure they would actually work. Once we got infrared cameras and other forensic analysis tools, we were able to find areas the insulation wasn't there. It was simply missing in places, or it was in poor condition and the house was leaking like a sieve. The HVAC system and the insulation and air sealing systems are dependent on each other and neither can provide the intended comfort, energy efficiency and durability without the other."

Of all the elements of HVAC, it's the "V" or ventilation that concerns Sheldon the most.

"Heating and air guys have better tools now, and can properly analyze the house and house plan to determine the equipment size needed. If we do our job, we can make sure the heated or cooled air stays in the house, but if we do a great job insulating and air sealing, and they don't do the ventilation part of HVAC, people could be hurt. It's not healthy, it's not comfortable, and durability suffers when we under-ventilate. It's also the root cause of many odor-related problems we hear about with spray foam. Odors are not necessarily the fault of the foam, but of poor ventilation in the house causing the customer complaint."

Spray foam workers partnering with HVAC contractors should work together to calculate proper equipment size and an appropriate ventilation strategy. If the HVAC contractor is not engineering and installing ventilation, Sheldon said, he's in violation of the building code.

"Unfortunately, code officials in some areas don't know the ventilation requirement in the code even exists," he said. Code officials do the best they can to keep houses safe, but there are a multitude of codes to keep up with and some inspectors aren't well versed in mechanical ventilation requirements.

"It's up to us as an industry, and by 'us' I mean HVAC and insulation and air-sealing contractors, to understand the durability enhancement we're responsible for, the indoor air quality we're responsible for, and the general health of the building and its occupants we affect when we install our building envelope and climate control systems." ○

SPF INSURANCE GROUP

Insuring SPF Contractors Since 1993



**YES...It Happens!!
Are You Covered?**

**We're your one-stop shop for
all things SPF Insurance related**

INSURANCE SERVICES:

- General Liability
- Commercial Property/Theft
- Contractor's Equipment/Theft
- Commercial Auto
- Worker's Compensation
- Commercial Umbrella
- Pollution
- Spray Rig Rental Reimbursement

**"WE understand the process and
the equipment you use"**

Call now for more information:

1-888-893-6787

www.spfinsurancegroup.com

Program Not Available in AZ or NY

SPF products developed with contractors, for contractors.



Insulation contractors told us what they wanted in spray foam:

- Best in class yields
- Best in class shelf life
- Economical
- No equipment clogging
- Low emissions
- Environmentally friendly

Ecospray™ and Genspray™ from Foam Supplies, Inc. have everything you need. Plus, unlike harmful HFC-based spray foams subject to EPA restrictions, they do not contribute to global warming, ozone depletion or smog production.

ecospray™

g@nspray™

foam supplies, inc.
Better Products. Better for the Environment.
www.foamsupplies.com

45th
anniversary
FOAM SUPPLIES, INC.
Success Through Innovation