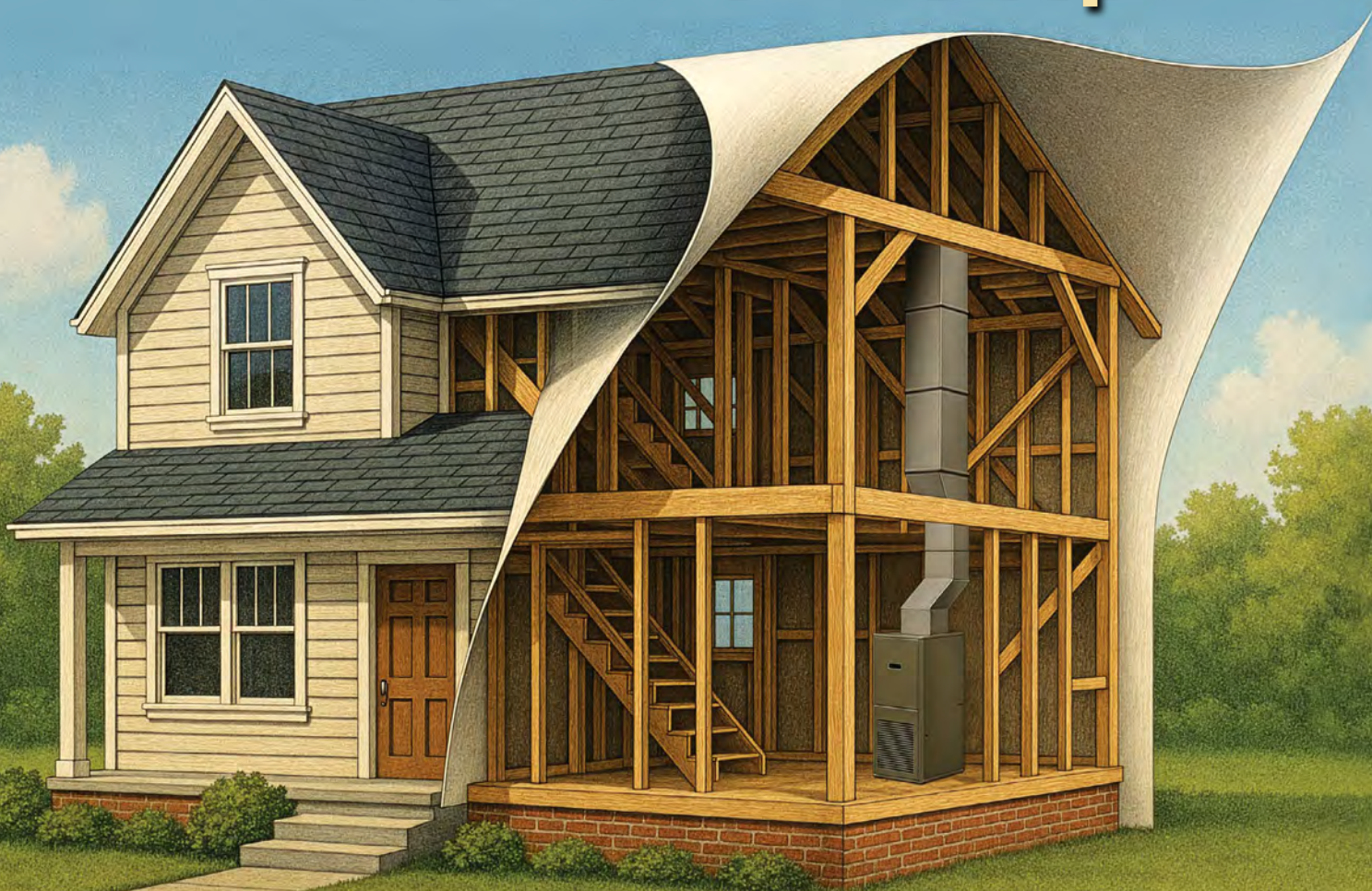


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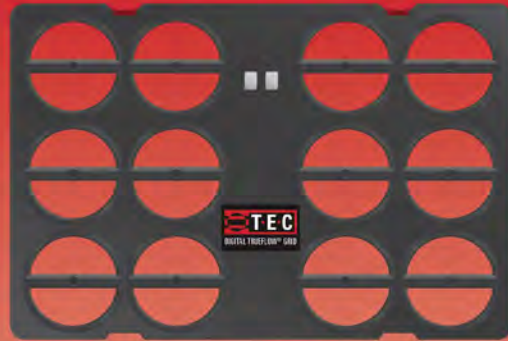


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- **2026 Residential HVAC Market: High-Performance Contractors Will Win**
- **Turn High Static Pressure into More HVAC Sales**

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The Power of Choice: Leading with Options



Mike Weil is editor-in-chief and director of communications and publications at National Comfort Institute, Inc. Contact him at ncilink.com/ContactMe.

Back in 1980, one of my favorite rock bands came out with a new album titled, “Per-
manent Waves.” One track — Free-
will — has always resonated with me. The refrain of that song says:

“You can choose a ready guide in some celestial voice / If you choose not to decide, you still have made a choice / You can choose from phantom fears and kindness that can kill / I will choose a path that’s clear, I will choose Freewill.”

The power to decide isn’t just in our hands — it’s in the hands of every client that every HVAC contractor serves. The days of “one size fits all” are gone. Residential clients are savvier than ever, technology is advancing rapidly, and the choices you offer can make or break not just a single deal, but your long-term success.

Options aren’t about upselling; they’re about meeting unique needs. High-Performance HVAC™ contractors are in a prime position because of their training and focus on testing, diagnosing, and prescribing solutions tailored to each client.

A LANDSCAPE IN MOTION

The HVAC industry is transforming, and fast. Regulatory shifts, energy-efficiency mandates (including electrification), adapting new heat pump technology, and growing demand for smart technology systems are rewriting the playbook. Contractors face increased pressure to stay ahead of codes, master emerging technologies, and satisfy clients who expect more than basic solutions.

Gone are the days when a simple “good, better, best” proposal worked. Today’s educated consumers want to understand their options — from advanced filtration to energy-saving controls —

because their comfort, health, and budgets depend on those choices. Contractors who fail to adapt risk losing relevance.

WHY OPTIONS MATTER: CREATING WIN-WINS

Offering options isn’t about overwhelming clients with a menu of parts and prices. It’s about helping them make informed decisions. This approach sets high-performance contractors apart. It helps capture more value per job, build lasting relationships, and reduce callbacks.

A client who feels involved in the decision process is far less likely to second-guess their investment or seek another contractor’s opinion later.

REAL-WORLD INSIGHTS

In this magazine, we’ve profiled contractors who make options the centerpiece of their service models. Many report higher close rates and greater client satisfaction as a result. The most successful ones don’t just install equipment — they create experiences by presenting meaningful, customized options.

IT’S TIME TO LEAD WITH OPTIONS

High-Performance HVAC contractors have an unprecedented opportunity to shape the future of our industry by embracing the power of choice.

As Geddy Lee, Alex Lifeson, and Neil Pert said in their 1980 hit, we can’t escape the responsibility of choice, but we can guide it with clarity and confidence.

Contractors who thrive will see every client interaction as a chance to educate, empower, and deliver. If you want to stand out, start by making options the foundation of your service.

Help clients achieve free will and your bottom line will thank you for it. 



Written by HVAC Professionals for HVAC Professionals

Matrix Strap for Evergreen's K-Tab Kit

For decades the balancing industry has been responsible for meticulous measurements and tests to complete contracted Testing, Adjusting and Balancing (TAB) projects. Over the years there have been huge advancements in the test instruments and accessories we use.

This month I'm highlighting a simple accessory with huge potential benefits for TAB professionals. **The Velocity Grid/Velocity Matrix Strap Assembly** is part of the **Evergreen Telemetry K-TAB Kit** which can be obtained in several configurations to fit your needs.

The Matrix Strap is most often used while measuring economizer and ventilation airflow during the process of

testing, setting, verifying and certifying ventilation requirements.

Once the Matrix itself is assembled, affix the strap to the unit after measuring the open area in square feet.

Once the Matrix is securely in position, monitor the system with Evergreen's **Wrist Recorder** and make adjustments to the damper position until the displayed velocity is at the target velocity.


This method greatly reduces the number of repeated measurements required with other instruments and procedures. I use this K-Tab kit with the Matrix Strap to greatly streamline my outside air and ventilation TAB projects. You can too.

It makes the job easier, more accurate, and is quite handy. Along with the Wrist Recorder, you are all set to help commercial customers by providing proof



their systems are balanced properly.

For more information on the K-Tab Kit and the Matrix Strap, go to ncilink.com/EvergreenKTab.

— by Jeff Sturgeon, National Comfort Institute Southern California Training Center Manager/Instructor 

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Friday, March 13, 2026
Friday, April 24, 2026



How Important is Combustion Analyzer Calibration?

Contractors have complained for years about the expense in both downtime and money of sending their **combustion analyzers** to the factory for calibration. This is what most manufacturers recommend and is the best way for them to address liability or accuracy issues. I've found that most manufacturers have little to no field experience when it comes to using these instruments.

So, they take a safe rather than sorry approach. But is this annual combustion analyzer calibration really necessary? What about those CO alarms that people install in their homes? Most have a five-year warranty and are never required to be calibrated. That might be another story for the future.

So why would I, one of the most vocal people about **CO poisoning**, question calibration? Sometimes I feel like I'm the only one in the park on the teeter-totter.

WHY CALIBRATE?

Manufacturers first began requiring **analyzer calibration** in 1985. The main reason: these early portable combustion analyzers were the first to measure carbon monoxide (CO) using electro-chemical sensors.

Other than the CO accuracy, the only other sensor that needed calibration was the O2 sensor and it self-calibrated every time an analyzer was turned on. The temperature probe, which is not as critical, could be checked in boiling water.

So, here's some questions to think about: **Does the calibration or accuracy of the CO sensor have an effect on detecting CO problems? How accurate were the chemical**

CO tubes that were used for years?

Unlike today's digital CO meters, the chemical glass tubes only measured CO above 100 ppm and each tube cost \$3.00. Anyone claiming to have years of experience using these glass tubes is no different than someone



who studied time using a sundial.

However, even the sensitivity of the tubes did not lead to misdiagnosis. I want to discuss what really causes inaccuracy in detecting or diagnosing CO problems, but first a little history, based on 40 years of field experience.

SOME BACKGROUND

As a salesman and demonstrator of the first portable digital combustion analyzer with a carbon monoxide sensor, I had to ensure that instrument was accurate. Again, as mentioned above,



the manufacturer recommended the analyzer be sent back to the factory for calibration. This certainly was an inconvenience because doing that would leave me without a demo unit to show potential customers.

I soon found out that this analyzer could be calibrated in the field using [calibration gas](#) and factory instructions! Later, I decided to offer this field calibration service to my customers.

As my customers and students know, most instrument manufacturers thought no one was harder on their combustion analyzers than me. Every analyzer I used was exposed to levels of CO most would never encounter intentionally or not intentionally. Manufacturers believed such treatment would ruin the sensor. That never happened.

So how often was my analyzer out of calibration? How often were the hundreds of analyzers I checked out of calibration?

In some cases, the instruments I checked hadn't been inspected or calibrated in four or five years. Most were less than 5% off the calibration gas, which was within the manufacturers' specifications. The only one I found worse than that was a brand-new analyzer just back from factory calibration and it was off by more than 20%!

Even that shouldn't keep anyone from diagnosing any CO problem.

THE REAL PROBLEM

CO sensor calibration never misses or overlooks problems.

If the calibration or accuracy of the CO sensor is 100% but you only test a furnace in a home with a water heater and a furnace, the accuracy is only 50%. If there is a furnace, water heater, and gas range and you only test the furnace, your accuracy (calibration) is 33%.

If there is a furnace, water heater, gas range, and a gas log and you only test the furnace, your accuracy (calibration) is 25%. By the way, if you only look at one CO reading after five or 10 minutes, your accuracy is off another 50% or more.

And finally, if your analyzer is sitting in your vehicle and you don't use it, your accuracy is zero.

For years I was told the only reason I found so many CO problems is because I looked for them. Isn't that our job? If you use your analyzer on a regular basis, you know if it is or isn't out of calibration.

WARNING: NEVER TURN YOUR ANALYZER PUMP OFF WHEN IT OVERRANGES ON CO!!


This causes the CO sensor to be saturated and take much longer to recover. Removing your probe from the flue is acceptable but don't turn the analyzer off. Unfortunately, there are manufacturers that automatically program their pumps to shut down even though they have been advised

not to do that.

No matter what — do not turn off the power and try to restart the unit. It will give you error messages for possibly hours. Do not let anyone tell you your CO analyzer is defective. This will not affect the accuracy once the CO clears.

HERE'S THE CONUNDRUM

Calibration matters, but not as much as how you use your analyzer. A perfectly calibrated instrument sitting in a truck does nothing to protect your customers. The real key to accuracy is thoroughness: checking every potential source of carbon monoxide, not just the obvious ones.

In my decades of experience, my advice is to keep your analyzer in good shape, but more importantly, use it everywhere CO can hide. That's how you truly keep people safe. 



Jim Davis' career began back in 1971 when he went to work for an HVAC contractor before moving on to work for a distributor in 1977. That is where he became involved with selling the first

digital combustion analyzers. He went on to develop the first combustion testing protocols and field diagnostics using a digital combustion analyzer. All (100%) of the combustion taught at [National Comfort Institute \(NCI\)](#) is based on hands-on field experience and actual results. Contact him with any questions at nclink.com/ContactMe.



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The Future of Design with Tony Amadio


Tony Amadio is president of **First Dimension Software** and the developer of TrueLoads, a residential HVAC system design app. He brings more than 18 years of engineering experience in the HVACR industry, plus a strong background in HVAC education. Tony holds a Master of Science in Mechanical and Aerospace Engineering from the University of Central Florida.

In this episode, Tony speaks with **Adam Mufich** of **National Comfort Institute** about the different methods of doing load calculations. They discuss the pros and cons of the various software platforms and the need for always seeking more accuracy, especially in light of many of today's more sensitive

high-performance systems.

They deep dive into comparing Manual J to the ASHRAE standards and other software that takes into consideration something he calls "heat balance" and more.

Amadio talks about the need for load calc software to take things into consideration that Manual J doesn't — things like time of loads, zoning considerations, types of materials used in walls and floors and so on.

"No matter what," he says, "the magic is in the duct design. You can have the best load calc, but if ducts are wrong, everything is wrong." 

Catch these and Other Episodes at HVACToday.com/Podcast



Behind the Measurements: Air Balancing with Scott Fielder

This High-Performance HVAC™ podcast has National Comfort Institute Instructor **Adam Mufich** sitting down with **Scott Fielder** from Evergreen Telemetry for a conversation about commercial air balancing, field measurement, and the stories behind Evergreen's innovative tools.

A Deep Dive with Ed Janowiak (ACCA's Manager of HVAC Design Education)

Ed Janowiak joins **Adam Mufich** to discuss Ed's journey of measuring heat pump performance. Ed shares the challenges in performing air flow and Btu calculations. He and Adam also discuss practical ways to measure coefficient of performance and conduct quick diagnostic tests that can provide valuable insights into HVAC system health. Whether you are an industry veteran or just getting started, this conversation will have meaning and value to you.

One Year in the Life of a High-Performance HVAC Contractor

Contractor **Anthony Woo** shares with our podcasting audience how he first connected with NCI, the impact it's had on his professional journey, and the lessons he's learned over the past year. From new skills to real-world successes, this conversation highlights how training and education can transform not just a career, but an entire approach to residential HVAC.

Static-Pressure Sales Versus High-Pressure Sales

In this episode, we unpack the difference between pushy, outdated sales tactics and data-driven conversations that build trust. **Al D'Ambola** shares highlights from his Summit presentation, including how to make measurements relatable for homeowners and a creative approach to following up with customers.

Furnace Safety: Correcting Hazardous Operation with Vince Lopez

In this episode, **Vince Lopez** shares a real-world situation where another contractor claimed a furnace was safe, but testing revealed a dangerous situation. Vince walks us through how he identified the issue and provided a solution, and why education and proper testing are critical to protecting our customers.

Listen or watch wherever you find your podcasts or visit HVACToday.com/Podcast

2026 Residential HVAC Market: *High-Performance Contractors Will Win*

If you've been following the forecasts for 2026, the one thing I've noticed is the number of mixed signals being bandied about. Some analysts predict a slow start. Manufacturers are cautiously optimistic. Housing remains uneven. Plus, homeowners are more price-sensitive and, in many cases, are trying to get one more year out of HVAC systems that are clearly past their prime.

From where I sit, all of that may be true. But here's the part that matters most:



The 2026 outlook won't be bad for the residential HVAC industry. It will simply be a challenging year for those contractors who focus only on new installations and equipment change-outs.

What does that mean? With all the changes in the marketplace, success comes down to one thing: *"If You Don't Measure, You're Just Guessing™."*

With that in mind, I believe that residential High-Performance HVAC™ contractors and the trends heading into 2026 align perfectly with the way you already operate — by **testing, commissioning, and verifying system performance.**

KEY INDICATORS AND OPPORTUNITIES

One study by [Research and Markets Research Store](#) highlights a number of factors that will heavily impact the residential HVAC marketplace, including electrification, refrigerant transition, IAQ and ventilation, controls, installer capabilities, and the impact of building envelopes on HVAC equipment. Here's a quick rundown from their study:

- **Electrification and heat pumps are redefining the core product mix.** Air-to-air and cold-climate heat pumps with variable-speed inverters are displacing fossil systems in both new build and replacement; dual-fuel hybrids persist where grid or envelope constraints exist.
- **Inverter and VRF technologies push comfort.** Variable-speed compressors and ECM motors deliver tighter temperature/humidity control, lower noise, and higher SEER/HSPF ratings across diverse climates. Simpler line sets, pre-charged kits, and app-guided commissioning reduce callbacks, improve installations, and preserve warranty integrity.
- **Refrigerant transition continues.** Moving away from legacy refrigerants to lower-GWP options requires charge-size management, new safety features, and installer certification.
- **IAQ and ventilation have become baseline, not upsell.** Filtration beyond standard minimums, humidity control, and germicidal options are required for wellness-minded homeowners. Packaged solutions that balance ventilation with energy recovery and tight envelopes avoid comfort penalties. Data-backed solutions increase perceived value and justify premium service plans.
- **Connected controls and service platforms unlock lifetime value.** Smart



thermostats, cloud telemetry, and predictive maintenance convert intermittent installs into recurring relationships.

- **Installer capability is as critical as equipment efficiency.** Workforce shortages elevate brands that simplify design and commissioning. Training academies, virtual reality modules, and certified dealer tiers improve quality and reduce callbacks.
- **Envelope and HVAC co-optimization is gaining traction.** This is where high performance and building science come together. Programs increasingly couple HVAC upgrades with insulation, air sealing, and windows to reduce peak load and downsize equipment.
- **Affordability pressures.** Consumers are hesitant when faced with high prices and low perceived value. Contractors who can prove results through testing and measuring can document clear lifecycle costs, offer financing options, and subscription maintenance to mitigate sticker shock.
- **Climate resilience and peak-load management shape designs.** Heat waves and cold snaps

demand robust low-ambient operation, surge protection, and backup strategies. Defenses against other calamities by Mother Nature are also attractive to potential buyers.

- **Sustainability and transparency remain differentiators.** Quiet operation, low refrigerant leakage, and grid-friendly controls align with green certifications. Contractors who offer verifiable documentation and procurement compliance are more attractive to green-minded consumers.

A SLOW START CHANGES THE CONVERSATION, NOT THE NEED

Housing starts have been declining. According to the [Trading Economics website](#), the latest numbers show that, as of August 2025, U.S. housing starts fell 8.5% month over month to a seasonally adjusted annual rate of 1.307 million units.

This number is down from a slightly revised 1.429 million in July and well below market forecasts of 1.37 million. That is the fourth-lowest reading since May 2020.

On the [HVACRTrends.com website](#), they quote several studies that cite changing demographics, interest

rate pressure, and a softer rental market in 2026.

They say demographic trends are re-drawing demand in the housing markets where younger buyers, specifically first-time buyers, continue facing affordability barriers.

According to this report, this matters on the HVAC side of things because:

- ◆ Fewer entry-level new homes means fewer low-margin, high-volume opportunities
- ◆ Mid-life buyers and older downsizers value reliability, comfort, and lower lifetime operating costs
- ◆ Affordability migration will support demand in Sunbelt and second-tier cities, while expensive coastal markets lag.

“This is one of the clearest 2026 housing market implications for HVAC channel leaders: shift your focus toward premium comfort solutions and markets where demographic growth is actually happening,” the study says.

Consumer spending is all over the place. According to a [Wall Street Journal article on December 23, 2025](#), the overall economy continues to grow despite factors such as the

government shutdown, tariffs, immigration issues, and so on. Reporters **Jeanne Whalen** and **Rachel Wolfe** write that the engine, if you will, is consumer spending. But it's not what you think.

"The most vigorous spending has come from the nation's top 10% of earners, who have gradually come to account for nearly half of national spending," they write.

Furthermore, the article states that many economists see this as a warning sign because spending by wealthy Americans is far outpacing that of the rest of the populace. If that spending falters, coupled with a downturn in the housing or stock markets, things will go south quickly.

Whalen and Wolfe also state that younger and middle-income consumers are cutting back on spending due to inflation and other factors. They add, "Americans' disposable personal income remained flat after inflation, despite their robust spending. The savings rate fell to its lowest level since 2022."

CONSUMER CONFIDENCE

It's important to note that [consumer confidence dropped](#) in December, marking the fifth consecutive month of declines.

In response to these challenges, there's been a significant shift in consumer behavior. Homeowners are increasingly opting to repair their existing HVAC systems. Several factors drive this "repair over replace" trend:

- ➔ Sticker shock from escalating equipment costs
- ➔ The desire to extend the life of

current units in the face of economic uncertainty

- ➔ Hesitation to take on large capital expenditures in a volatile market.

Most economic outlooks suggest residential demand may start slowly in early 2026. Interest rates remain a concern, so consumers are more cautious. But homeowners don't stop needing comfort. Instead, they become more careful buyers. They ask better questions, like:



- Why is my home uncomfortable?
- What's actually wrong?
- How does your solution fix the problem?
- How will I know it worked?

That thinking shift favors High-Performance HVAC™ contractors. Why? Because instead of guessing, you test. Instead of promising, you measure. Instead of hoping, you verify. In a cautious market, proof matters — and proof builds trust.

MARKET GROWTH IS REAL, BUT WON'T LIFT EVERYONE

Most studies I look at say that the residential HVAC market should still grow through 2026 and beyond, driven by five key factors:

- ◆ Aging housing stock
- ◆ Electrification and heat pumps
- ◆ Energy efficiency requirements
- ◆ IAQ and comfort awareness
- ◆ Smart controls and connected homes.

In the [AHR 2026 Trends Report](#), **Steve Yurek**, president and CEO of AHRI, says that "Keeping essential heating, cooling, water heating equipment affordable in light of eliminated tax credits and increased tariffs

is probably the most pressing issue facing manufacturers."

He also cites keeping ahead of the impact of global tariffs as a continuing, complex challenge.

But market growth doesn't lift all contractors equally. Those who rely solely on equipment replacement will feel pressure from tighter margins, higher marketing costs, and greater price shopping.

High-performance contractors operate differently. They sell **outcomes**, not boxes.

How? By discovering and solving real airflow problems. They understand how duct deficiencies affect comfort and energy use, and know how to fix them. And by testing, they can address comfort, humidity, and indoor air quality (IAQ) together.

The truth is, HVAC work doesn't disappear in a slower market — it becomes more valuable.

EXISTING HOMES WILL DRIVE OPPORTUNITY

With new residential construction still uneven, 2026 continues to favor **existing homes**. And existing homes are full of performance problems that have never been measured, much less corrected, including:



- [Poor duct design](#)
- [High static pressure](#)
- [Inadequate airflow](#)
- [Over or undersized equipment.](#)

These issues don't show up on a change-out proposal. They show up when you **test the existing system.**

[High-Performance HVAC contractors](#) know that testing reveals real problems. Proper **commissioning** ensures the system design performs under real conditions. **Verification** confirms the results and closes the loop with the homeowner.

That methodology turns ordinary replacements into performance upgrades and higher-margin work.

HEAT PUMPS RAISE THE BAR FOR PERFORMANCE

Heat pumps will continue gaining traction in 2026. Incentives, electrification goals, and OEM investment are all pushing adoption forward. In the AHR Trends Report, **Clifton Beck from the ESCO Institute** says that heat pump shipments have outpaced gas furnace shipments by 32%.

"That's not a minor trend; it's a clear market signal, making it no longer optional to understand heat pumps. It's essential," Beck says.

However, it's important to remember that **heat pumps are less forgiving** than traditional systems. They require proper airflow, reasonable static pressure, well-designed duct systems, and correct setup and controls.

This technology is where High-Performance HVAC becomes essential, not optional. Beck said that this is why

training and certification are more important than ever.

If you install a heat pump without testing, commissioning, and verifying that it operates as designed, you invite callbacks and disappointed customers. Designing and commissioning a heat pump system properly builds confidence — and referrals.

In 2026, successful contractors won't just install heat pumps. **They'll prove those heat pumps work.**

COMFORT, EFFICIENCY, AND IAQ ARE NOW ONE CONVERSATION

Homeowners no longer see comfort, efficiency, and indoor air quality as separate issues. They expect all three. High-performance testing shows how:

- Airflow affects comfort and efficiency
- Duct leakage impacts IAQ and operating cost
- Pressure imbalances affect humidity and infiltration.

When contractors explain those relationships to their customers using real data, the conversation changes. You're no longer upselling accessories: you're solving **their** problems.

And when the work is complete, verification provides something homeowners rarely get in residential HVAC: certainty.

WHAT HIGH-PERFORMANCE CONTRACTORS SHOULD DO NOW

As you prepare for 2026, here's where I suggest you focus:

- ◆ **Make testing standard, not optional**
- ◆ **Treat commissioning as non-negotiable**

- ◆ **Show verification results to every homeowner**
- ◆ **Train your team to explain the "why," not just the "what"**
- ◆ **Price your work based on results, not equipment.**


These aren't new ideas, but in 2026, they will set leaders apart from everyone else.

NO SHORTCUTS TO SUCCESS

The residential HVAC market in 2026 won't reward shortcuts. It will reward contractors who are willing to slow down, measure more, and prove their work.

High-Performance HVAC isn't a trend. It's becoming the standard for contractors looking to grow, even as the market tightens. If you're already testing, commissioning, and verifying, 2026 is your opportunity to lean in and lead.

If you're not, now is the time to start.

Because in the years ahead, the contractors who can **prove performance** won't just survive — they'll define what professional residential HVAC looks like. 



Mike Weil is the editor-in-chief of **High-Performance HVAC Today** magazine as well as the director of communications for [National Comfort Institute](#) (NCI). He has been with NCI since 2014

and is a former chief editor for *Contracting Business* magazine. For article writing opportunities, reach out to him at ncilink.com/ContactMe.

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Turning High Static Pressure into High-Performance HVAC™ Sales

How measuring system “blood pressure” can boost credibility, customer trust, and your bottom line.

You’ve probably heard the phrase “high-pressure sales.” It brings to mind an image of a pushy salesperson trying to talk a customer into buying something they don’t really need. That kind of salesmanship has no place in the world of High-Performance HVAC™ contracting.

But what if I told you there’s another kind of “high pressure” that **CAN** lead to more sales — if you know how to read it?

I’m talking about **static pressure** — the blood pressure of an HVAC system.

When you measure static pressure and use it to have honest, data-driven conversations with your customers, you move away from guesswork and toward credibility. You’re not selling anymore — you’re helping homeowners make informed decisions based on science. That’s the foundation of a high-performance business.

FIRST, SOME BACKGROUND

I’ve been in this industry a long time — since 1976, to be exact. My first job out of trade school paid \$2.75 per hour. Back then, I was cutting

holes, roughing in ductwork, and trying to figure out how the systems I was installing actually worked.

Like many young technicians, I learned through trial and error, and I made plenty of mistakes. I didn’t always do things the right way, but every mistake became a lesson.

My path took a turn in the mid-1990s when I joined [Retrotec](#), selling blower doors nationwide. That’s where I got my first taste of field training. Each sale came with three days of hands-on instruction, and I started to see the power of testing and measuring.

Retrotec also gave me a [TSI flow hood](#), which I took on every call. Before long, contractors were asking if I could balance air systems.

That question — “Can you balance air?” — led me to [National Comfort Institute \(NCI\)](#), where I met [Rob Falke](#) and learned what true air diagnostics looked like. I became NCI’s first instructor in 1999, and it’s been my passion ever since.

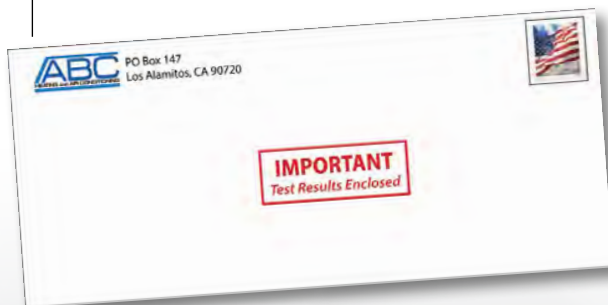
Teaching these classes isn’t just a job — it’s part of who I am. And the message I bring contractors is simple: **Measure. Don’t guess™**.

THE STATIC PRESSURE CONNECTION

At the 2025 NCI Summit, I taught a session called, “[Implementing Static Pressure on Every Service Call](#).” Because honestly, that’s where it belongs: on every call.

Static pressure is the most powerful diagnostic tool in your bag. It indicates the overall health of a system. And it allows you to turn technical data into a simple, relatable story your customer can understand.

To make that connection, I often compare static pressure to human blood pressure.





I'll say, "If your doctor tells you your blood pressure is 197 over 131, you know something's wrong. You need treatment — fast. Now imagine your HVAC system has a static pressure that's 1.64 times higher than it should be. That system's in trouble too."

Communicate your field findings by sending the NCI Important Test Letter in a handwritten envelope. Why a handwritten envelope? So, your customers open the letter and don't throw it away as junk mail.

HOW THE COMPARISON WORKS

Most residential furnaces and air handlers are rated for 0.5 inches of water column (w.c.) **total external static pressure (TESP)**. Through NCI research and thousands of field reports, we've found that the average system actually runs around 0.82-in. w.c.

When you divide **measured** static by **rated** static ($0.82 \div 0.5 = 1.64$),

you get a multiplier. If you apply that multiplier to standard blood pressure (120/80), you end up with 197/131.

Now imagine explaining that to a homeowner:

"Your system is operating at a pressure that would be like a person walking around with a blood pressure of 197 over 131. They wouldn't feel great, and neither does your equipment."

When you use that analogy, you're not talking over the customer's head. You're helping them visualize the problem in a way that feels real.

WHAT HIGH STATIC PRESSURE REALLY MEANS

So, what happens when a system's static pressure is too high?

- Airflow drops
- Equipment runs hotter and longer
- Blower motors overheat and fail prematurely
- Coils freeze

- Compressors get "**murdered**," not just "fail."

I always tell technicians and salespeople: compressors and blowers don't die — they're murdered by poor airflow. And we're often the ones pulling the trigger when we ignore the warning signs or decide not to measure because there is no time or we were never properly trained.

High static pressure is a symptom, not the disease. Your job is to find what's causing it — restrictions in ductwork, undersized returns, dirty filters, restrictive coils, or poor transitions or system effect. Then, you need to give your customer clear options to resolve the issue.

THE STATIC PRESSURE BUDGET: A ROADMAP FOR TECHNICIANS

In commercial air balancing, engineers provide clients with the building's required airflow and static

pressure. But in residential HVAC, that's up to you. That's why NCI developed static pressure budgets for furnaces and air handlers. They're not carved in stone, but they'll get you into the ballpark.

For example, on a gas furnace system rated at 0.5-in. w.c.:

- 40% (0.20-in. w.c.) should be across the evaporator coil
- 20% (0.10-in. w.c.) across the filter
- 20% (0.10-in. w.c.) on the supply duct
- 20% (0.10-in. w.c.) on the return duct.

When you test and document these values, you can pinpoint which part of the system is choking airflow and explain it clearly to the homeowner. This process turns a "sales call" into an educational conversation.

A REAL-WORLD EXAMPLE: THE DAYTON, OHIO CASE

A one-man shop in Dayton, Ohio — Kiefer Thompson — called me one Saturday night around 8:30. He was

working on a four-ton system that had been giving his customer headaches for years: noisy ducts, uncomfortable rooms, and poor performance.

He had already replaced the return drop and filter rack, but his static pressure was still 0.97-in. w.c. The ECM blower motor was pulsating, trying to overcome the restriction. At that rate, it wouldn't last long.

Kiefer and I spent over an hour on the phone reviewing his test results. I told him to look for system effect — places where air changes direction sharply over a short distance. Air hates to do that. **See figure 1.** Airflow does not like to make three turns within a few feet.

A few days later, he called back. He found it. The return duct made three

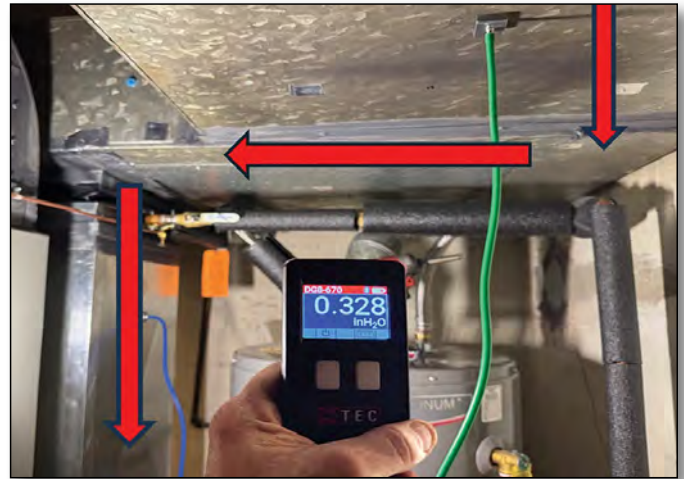


FIGURE 1: Airflow hates taking three or more turns.

90° turns within a couple of feet—a recipe for disaster. The pressure drop across that short section alone was 0.33 in. w.c.!

So, he redesigned the return and added a second return duct. The results?

- ❑ Static pressure dropped from 0.97 to 0.57 in. w.c.
- ❑ Airflow increased to 391 CFM per ton
- ❑ The pulsation stopped
- ❑ Noise disappeared
- ❑ The system operated as designed.

The homeowner was thrilled and ended up replacing the furnace as well. That's what I call **turning high static pressure into a high-performance sale.**

SELLING WITHOUT "SELLING"

You don't need to push. You don't need gimmicks. When you test, document, and present the data to customers, the numbers sell the job for you.

Here's how to make that happen on your next call:

1. Measure total external static pressure on every system you touch
2. Use simple analogies like blood pressure to make it relatable

Quick Static Pressure Reference

Rated External Static Pressure (ESP):

Most furnaces and air handlers: 0.5-in. w.c.

Static Pressure Budget for Gas Furnace (**0.5 in. system**):

Coil: 0.20 in.

Filter: 0.10 in.

Supply duct: 0.10 in.

Return duct: 0.10 in.

Coil .32

Filter .16

Supply duct .16

Return Duct .16" wc

Quick Tip:

If your total static exceeds the nameplate rating by more than 20%, start testing each component individually. Identify where the most significant pressure drop is — and start there.

3. Identify restrictions using static pressure budgets
4. Show the customer the data
5. Offer options—not ultimatums
6. Follow up and show you care about long-term performance.

THE REAL MESSAGE

Testing and diagnostics aren't just technical skills — they're communication tools. When you measure, you show professionalism. When you explain what those measurements mean, you build trust. And when you fix the root cause instead of the symptom, you create raving fans.

Homeowners don't want to be sold. They want to understand and make smart choices. When you test, you're not selling—you're serving.

High-Performance HVAC contractors are craftsmen. We diagnose, measure, and fix problems that others overlook. Static pressure testing is one of the best ways to prove that — and separate your company from every "high-pressure" salesperson out there.

A FINAL THOUGHT

The most successful contractors I meet have one thing in common — they test every system they touch.

They don't assume. They don't guess. They verify.

If you want to build your reputation, your revenue, and your results, start with one simple habit:

Measure static pressure on every service call.

Do that, and you'll see how data-

driven diagnostics can turn ordinary HVAC companies into high-performance leaders.

So grab your manometer. Take that first reading. And remember: High static pressure isn't just a problem — it's an opportunity. **NCI**



Al D'Ambola is an instructor and Customer Care Manager for **National Comfort Institute (NCI)**. He has conducted more than 500 seminars across the USA. Al has been in the HVAC industry since

1976. He has done everything from new construction installations and oil burner "soot sucker" tune-ups to servicing residential HVAC systems and selling both residential and commercial HVAC systems. He is also well-versed in balancing residential/commercial/industrial systems. He can be reached at ncilink.com/ContactMe.

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NCI HEADQUARTERS BUILDING CONSTRUCTION UPDATE

National Comfort Institute’s (NCI) new headquarters and training facility in the eastern Tennessee town of White Pine is getting closer to completion! The building is fully under roof, with interior framing and exterior finishes completed.

The concrete-wall super-insulated structure was built with state-of-the-art features like a combination of open and closed cell spray foam, completely encapsulating the roof and entire building. This means zero unconditioned space. The insulated concrete floors feature **Crete-Heat®** under slab panels with 100% radiant tubing tied to 10 independent manifolds allowing precisely zoned in-floor heating.

The building was capped with a premium gauge standing seam roof. As of this writing, utilities to the building are being completed providing water, natural gas and electric to power the boilers, heat pumps, lighting, and an array of HVAC equipment throughout the training spaces.

Mechanical and electrical systems will be installed, and finishes should be completed over the next 90 days with a move-in target of late March 2026.

NCI would like to thank the equipment manufacturers and distributors who are helping to make this project possible. So far this esteemed group includes [R.E. Michel](#), [Daikin Comfort](#), [Crete-Heat](#), [REHAU](#), and [Bradford White](#).

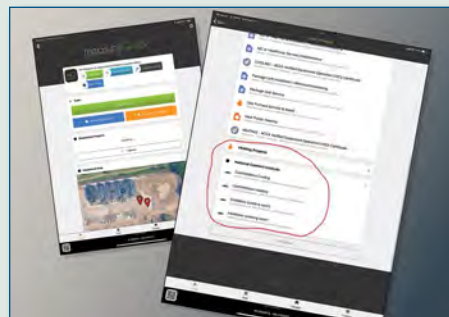
We would also like to thank **Bruce Randall**, president of [Standard Air Conditioning](#), our Knoxville-based High-Performance HVAC™ contractor, who installed the radiant floor systems and will continue to install the HVAC equipment and distribution systems throughout the building.

Stay tuned for more developments and HVAC installations!

COMFORTMAXX™ HEATING IS NOW LIVE IN MEASUREQUICK®

ComfortMaxx™ Heating is a measureQuick® workflow designed to help HVAC professionals accurately measure real-world system performance using smart diagnostic tools. By capturing actual equipment output and generating an **Equipment Performance Score**, ComfortMaxx allows you to directly compare measured performance against the manufacturer’s rated capacity.

The guided workflow then walks you through measuring delivered capacity, producing a comprehensive **System Performance Score**. These scores make it easier to visualize and diagnose complex comfort issues that are often difficult to identify using traditional methods alone.



ComfortMaxx helps uncover lost Btus caused by duct leakage, airflow issues, and inadequate insulation — giving you clear, data-driven insight into where performance is being lost inside the home.

MeasureQuick automatically generates two detailed reports:

A customer-facing report with simple visuals and easy-to-understand indicators that clearly show where comfort and efficiency problems exist.

A contractor-facing report with in-depth data and diagnostics that help you quickly narrow your focus and deliver a reliable, targeted solution.

If you’d like to learn more about this partnership, go to ncilink.com/mQCM.


COMPANY CULTURE: THE HEART OF HIGH-PERFORMANCE HVAC™



National Comfort Institute’s (NCI) **2026 High-Performance HVAC Summit** is all about culture – from how contractors can build it to how that leads to growth, market dominance, and profits.

This year’s theme is all about company culture and how that is the heart of High-Performance HVAC. Educational sessions will focus on a good blend of the technical, cultural, and sales/marketing aspects of performance and what it takes for contractors to “get there.”

NCI Summit 2026 will be headquartered in Pigeon Forge, TN on Sept. 1-3. **Registration** is open now. You can also **reserve your rooms** at the special NCI rate at the [Dollywood Heartsong Lodge and Resort](#).

Stay tuned for more details on the program, the schedule, and the special activities being planned for this year. 



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Residential Heat Pumps: Let's Get it Right This Time



Dominick Guarino
is publisher of
*High-Performance
HVAC Today* magazine
and CEO of National
Comfort Institute, Inc.
He can be reached at
[ncilink.com/
ContactMe](http://ncilink.com/ContactMe).

Those of us who have been in the industry since the 1980s remember the trend away from early heat pumps sold in the 70s. In those earlier years the energy crisis created demand for heat pumps as natural gas shortages became a reality and prices doubled by 1979.

The industry quickly became enamored with heat pumps, swapping out gas and oil furnaces by the thousands. Many new communities began building all-electric heat-pump homes – particularly in the northern states. But it wasn't long before customers began to complain about cold drafty air and longed for the warm comfort their former fossil fuel furnaces provided.

In the early 1990s, gas companies began running lines through all-electric communities, as thousands of heat pumps were replaced with comfortable gas furnaces. I was in fact one of those contractors, retrofitting dozens of heat-pump homes around Cleveland, Ohio with shiny new high-efficiency furnaces and 10 SEER air conditioning units. And my customers were thrilled!

Fast forward to the early 2020s. In the quest for reduced greenhouse gases through electrification we are now in **Round Two** of replacing fossil fuel equipment with heat pumps. This time, however, we have an opportunity to get it right!

THE GOOD NEWS

Today's heat pumps are not your grandad's Oldsmobile. Inverter technology and heat transfer improvements allow heat pumps to produce significantly warmer air even when outside temperatures drop below 0°F degrees.

When installed right on properly sized and installed air distribution systems, modern heat pumps can provide great comfort year-round.

And that is the caveat: **Properly sized and installed systems.**

THE CHALLENGE

Unfortunately, we are already seeing a significant issue in our industry with new heat pumps – mostly stemming from improper installation – and/or existing bad duct systems.

When it comes to inverter-based equipment sizing, airflow, ductwork, and proper registers are more critical than ever. There's not enough room on this page to get into all the technical details, but it's safe to say our industry has a real problem.


Manufacturers, wholesalers, and contractors are reporting a big uptick in customer complaints about their expensive new systems – and of course the equipment itself is rarely the cause. It's more important than ever that we both size equipment properly, and get the rest of the system right.

There's an industry myth that there's no need to properly size inverter heat pumps as they will ramp down to match the load. While there might be a smidgeon of truth to that, the adverse effects far outweigh this lazy approach to installation.

NCI's Adam Mufich put it succinctly recently: "An oversized inverter system might be the most expensive single stage heat pump your customer can buy." There are numerous issues with oversized inverter heat pumps ranging from high static pressures and reduced airflow, poor summer dehumidification, early equipment failures, and inefficient operation.

For a deeper dive, be sure to read Adam's [article in the January issue of Contracting Business Magazine](#) on this subject.

The bottom line is we need the whole industry to get it right this time.

This starts with manufacturers and wholesalers stepping up their product training and supporting beyond-the-box training on air distribution design and renovation offered by organizations like NCI and others. 

The NCI High-Performance HVAC™ Summit is Coming



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Registration Now Open!

Get ready to sharpen your skills and get to the **HEART** of the matter!

Great news: the team at National Comfort Institute (NCI) has secured the dates and location for their annual **High-Performance HVAC Summit 2026**.

Be sure to mark your calendars for September 1-3, 2026, in Pigeon Forge, TN.

The Summit will be headquartered in the **Dollywood Heartsong Lodge and Resort** – a stunning facility inspired by the beauty of the Smoky Mountains. Yes, Summit will be focused on high performance, but you can also plan a family vacation that features complimentary trolley service to Dollywood Parks, numerous dining options, as well as indoor and outdoor pools, and more.



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UPCOMING NCI TRAINING: FEBRUARY - APRIL 2026

PUBLIC LIVE TRAINING

Commercial Air Balancing

February 10-12: Monroeville, PA
 March 3-5: Florence, KY
 March 17-19: Oxnard, CA

Residential HVAC System Performance and Air Balancing

February 10-12: Phoenix, AZ
 February 24-26: Richmond, VA
 February 24-26: Milwaukee, WI
 March 3-5: Carrollton, TX
 March 10-12: Austin, TX
 March 10-12: Centennial, CO
 March 17-19: Kissimmee, FL
 March 24-26: Grand Rapids, MI
 April 7-9: Roswell, GA
 April 7-9: Troy, MI
 April 7-9: Colorado Springs, CO
 April 14-16: Tampa, FL
 April 21-23: Plymouth, MN
 April 28-30: Johnstown, CO
 April 28-30: Monroeville, PA



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Duct System Optimization and Residential Air Balancing

February 17-19: Glen Burnie, MD
 March 10-12: Appleton, WI
 March 10-12: Sacramento, CA
 March 17-19: Morristown, TN
 March 24-26: Lawnside, NJ
 March 24-26: Salt Lake City, UT
 April 14-16: Phoenix, AZ
 April 28-30: Eagan, MN

Combustion Performance and Carbon Monoxide Safety

February 24-26: Morristown, TN

Commercial HVAC System Performance

March 24-25: Maple Heights, OH

Airflow Testing & Diagnostics

April 7: Wheeling, IL
 April 21: Denver, CO

Refrigerant-Side Performance

April 22-23: Denver, CO

PUBLIC ONLINE LIVE TRAINING

High-Performance Approach to Heat Pump Retrofits - ONLINE LIVE

February 17-18

Airflow Testing & Diagnostics ONLINE LIVE

March 31 - April 1

PUBLIC ONLINE LIVE TRAINING (cont.)

Refrigerant-Side Performance ONLINE LIVE

March 31 - April 2

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Combustion Performance and Carbon Monoxide Safety

February 3-5: Anaheim, CA

Commercial Air Balancing

February 10-12: Anaheim, CA

Residential HVAC System Performance Certification Program

February 17-18: Anaheim, CA

High-Performance Approach to Heat Pump Retrofits

February 19: Anaheim, CA

Hydronic Testing, Adjusting, and Balancing

March 3-4: Anaheim, CA

Test & Certify Ventilation Systems and Economizer Certification Program

March 3-4: Tulare, CA
 April 28-29: Anaheim, CA

Duct System Optimization and Residential Air Balancing

March 17-19: Anaheim, CA

Visit NCIlink.com/ClassSchedule to view the latest schedule.