

Where Refrigeration Meets Airflow

Refrigerant-Side Performance Class

What if everything you thought you knew about diagnosing and solving refrigeration-side performance problems may not be totally correct?

Before you hook up a refrigerant gauge to a condensing unit, do you know for certain it's the right first step to solving the issue?

By tapping into the refrigerant-side and adjusting the charge before you establish the true causes of the problem, you may not solve it. In many cases, you might make things worse!

There is a better way!

This National Comfort Institute two-day advanced residential and commercial certification class provides you with real-world lessons and hands-on training. It's based on proven techniques on how to best approach refrigeration-side issues.

In this advanced testing, diagnostics, and troubleshooting class you'll discover why traditional approaches taught industry-wide are often not the best way to diagnose and fix performance and comfort issues.

What you'll learn:

- How to apply a performance-based, systematic approach to refrigeration-side diagnostics
- Explore new HVAC refrigeration cycle performance-related solutions
- Identify surgical system repairs to improve performance
- How to use inspection, testing, and system history to determine if and when you need to tap into the refrigeration circuit
- Address underlying issues that impact the system before adjusting the charge



Leading the Industry in
Performance-Based Contracting™

Refrigerant-Side Performance



Agenda:

DAY 1:

- Introduction to refrigeration testing principles
- How refrigeration system components affect performance
- How static pressure and airflow measurements reveal hidden effects on the refrigeration cycle
- High- and low-side of the system and how they affect performance
- Metering devices, evaporators, service valves, filter dryers, and line set sizing
- Hands-on testing throughout

DAY 2:

- The benefits of purging with nitrogen while brazing
- Superheat, subcooling, and other refrigeration metrics
- Proper use of NCI's Expanded Refrigerant Diagnostic Table
- How to tell if non-condensables are in the system, and determine how they got there
- Measure and interpret HVAC system static pressure to plot airflow
- Hands-on testing throughout

The day concludes with NCI's exclusive Refrigerant-Side Performance certification exam

"Just when I was becoming disenchanted with my industry, NCI opened my eyes to a new way, with performance-based outcomes, and I haven't looked back since."

*David Coziahr,
Owner, Coziahr Heating & AC*

"NCI is the standard for getting HVAC performance right in the home."

*Ed Lammers,
President,
Lamb Home Services*

Who Should Attend?

Residential and Commercial Technicians
Installers & Installation Managers
Service Managers

Frequently Asked Questions

Q: Is this a basic refrigerant-cycle course?

While some of the basics will be covered, this advanced class is aimed at technicians who already work in the field and have an EPA Section 608 certification.

Q: What are the start and end times of the class and is lunch included?

The typical NCI training day is 8:00 am to 5:00 pm. Light refreshments and lunch are included.

Who is NCI?

National Comfort Institute, Inc. (NCI) is the world leader in HVAC System Performance and Air Balancing training. We created the industry's best practices, processes, and forms and have been teaching them for decades.

What makes NCI's approach different? We show you how to thoroughly test and diagnose the system using practical, easy-to-follow methods so you'll know exactly what to do to provide your customers with optimum comfort and energy efficiency.

NCI coined the phrase "Performance-Based Contracting™", a unique approach to managing a contracting business through accountability and measurable results. During the past two decades, NCI has trained and certified more than 25,000 HVAC industry professionals. For more information about NCI, please call **800-633-7058** or visit **www.nationalcomfortinstitute.com**.



Additional Educational Opportunities from NCI:

- Residential HVAC System Performance & Air Balancing
- Hydronic Testing, Adjusting, & Balancing
- Large Commercial Balancing (National Balancing Council)
- Airflow Testing & Diagnostics Implementation
- Combustion Performance and CO Safety
- Commercial HVAC System Performance
- Commercial Air Balancing
- Duct System Optimization



Discover the Performance-Based Contracting™ Difference! Call 800-633-7058