



## Commercial Testing, Adjusting and Balancing Certification

Designed to ensure Integrity, Accuracy and  
Repeatability of Test Results

NBC has developed more than 60 practical testing and balancing procedures that certified professionals employ in the field. These practical standards ensure systems will be tested and balanced with integrity, accuracy, and – most critically – repeatability of the test results. Below is a partial list of available procedures:

- Grille Balancing Procedures
- Proportional Balancing Procedures
- Duct Traverse Procedures
- AK Factor Procedures
- Economizer TAB Procedures
- Stairwell Pressurization Test Procedures
- Pump Test Procedures
- Hydronic Valve Balancing Procedures
- VAV Testing Procedures
- Pneumatic VAV Testing Procedures
- Diagnostic Testing Procedures
- BTU Measurement Procedures
- Kitchen Hood TAB Procedures

### Learn The Principles Of Quality Testing, Balancing & System Troubleshooting

Get back to the basics of testing and balancing with in-depth, hands-on training provided by the experienced and highly skilled professionals at NBC.

At NBC, we are committed to providing top quality training and continuing education opportunities that begin with an intensive five-day certification course. This course is taught in the classroom and in the air/hydraulics lab where you'll review the principles of quality testing, balancing, and system troubleshooting while enhancing your technical skills in both air and hydronic testing and balancing. Then you'll learn specific methodology and procedures, unique to NBC.

A comprehensive written and field exam follows each training section. Upon successful completion of all coursework and the exams, you will receive the **NBC Certified Test and Balance Supervisor Certification** (*Only applicants who have met all other requirements are eligible for Supervisor Certification*).



# The Highest Standard In Actual Delivered System Performance Analysis

Training, continuing education, certification, and field support are keys to the development of NBC-affiliated test and balance firms. NBC certification identifies affiliated firms and Certified Balancing Professionals as qualified in professional methods and procedures for testing, adjusting, balancing, and commissioning commercial environmental systems.

## Process for Obtaining NBC Certification

If you are interested in NBC certification, you must first meet basic pre-approval criteria. Complete and submit a Preliminary Application. If you qualify, NBC will extend an invitation to apply for certification.

The Application for Certification specifies the comprehensive criteria required to earn NBC Certification. This includes:

- A minimum of 5 years TAB field experience for Supervisors, 3 for Technicians
- Ownership of required test instruments and tools
- Current certificates of instrument calibration
- Photos of test instruments
- 3 TAB reports from previous completed projects
- 3 Letters of recommendation from:
  - Architects
  - Design engineers
  - Building owners
  - Facility managers



## NBC Certification Course Outline

### Day 1:

- NBC membership standards and Code of Conduct
- NBC air and hydronic specifications
- Air testing and balancing administrative procedures
- Grille balancing
- Duct traverse and airflow readings

### Day 2:

- Gathering test data and information
- Fan laws and fan performance
- System performance calculations
- Troubleshooting and system solutions
- Testing air changes per hour
- Testing stairwell pressurization

### Day 3:

- Economizer and VAV testing
- Kitchen exhaust system balancing
- Temperature diagnostics/psychrometrics
- HRV and duct leakage testing
- Hands-on lab exercises
- **Air Balancing Certification Exam and Field Testing**

### Day 4:

- Hydronic balancing preparation
- Balancing hydronic systems
- Coil circuit setter balancing
- Pump laws and pump formulas

### Day 5:

- Hydronic troubleshooting and system solutions
- TAB quality control
- NBC TAB Supervisory & project mgmt. requirements
- **Hydronic Balancing Certification Exam and Field Testing**
- **Supervisor Certification Exam**



## NBC Certification Levels

### NBC Supervisor Certification

All NBC-affiliated firms must have at least one certified TAB Supervisor on staff. The TAB Supervisor is responsible for overseeing all aspects of the balancing project. To be eligible for the NBC TAB Supervisor Certification, the applying individual must have a minimum of five (5) years of TAB field experience, prove 1 year in business, submit 3 TAB reports, 3 letters of recommendation and prove ownership of all required equipment w/calibration certificates.



In addition, individuals must successfully complete training and pass five (5) exams in air and hydronic testing, adjusting, and balancing at a supervisory level. Among other skills, they must demonstrate the ability to use fan/pump laws, properly use applicable instrumentation, apply psychometrics, and determine actual delivered BTU performance of the equipment they have tested.

They must also be able to identify system defects and deficiencies, and recommend possible remediation using methods including CSER® (Cooling System Efficiency Reports) and HSER® (Heating System Efficiency Reports).

Successful candidates are issued a TAB Supervisor Certification number, wallet identification card, certificate, and certification stamp. Only the NBC Supervisor may stamp reports.

### NBC Technician Certification

Candidates must successfully complete training and pass two written and two practical exams. Among other skills, they must demonstrate the ability to use fan/pump laws, properly use applicable instrumentation, apply psychometrics, and determine actual delivered BTU performance of equipment that they have tested. Firm /organization **must** have NBC Supervisor to have an NBC Certified Technician.

They must also demonstrate the ability to identify system defects and deficiencies, and recommend possible remediation utilizing methods including CSER® and HSER®.

*Attendance of NBC Supervisor Course is mandatory for all applicants for NBC Supervisor Certification. NBC Supervisor testing is NOT offered independent of the Supervisor Course and is only offered at our training centers. The knowledge and ability to pass both the written & practical exams comes from years of experience & study and not just the training taught during class time. Course is designed to provide an overview / refresher and to teach procedures, standards and practices required of all NBC Certified Testing, Adjusting and Balancing Professionals.*

## What is National Balancing Council (NBC)?

NBC-certified firms in the U.S. and around the world provide unparalleled testing, adjusting, and balancing services on commercial HVAC system projects of all sizes and scope.

NBC established and maintains stringent standards that must be met by those seeking to qualify for certification. Engineers, contractors, building owners, and property managers can be assured every NBC-certified professional is required to complete a rigorous training program, and successfully pass a comprehensive examination process prior to receiving his or her credentials.

NBC is also a training organization. Upon request, NBC will provide customized training to suit the specific technical & budgetary needs of any NBC Certified Firm.

NBC's Practical Procedures provide a comprehensive and systematic guide to performing each of the components of a testing and balancing project. Combined with the NBC Code of Professional Conduct, these procedures ensure consistency of performance and quality results that customers demand and deserve.



## Who is NCI?

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

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](http://www.nationalcomfortinstitute.com)**.



**Call 800-633-7058**



## Commercial Hydronics and Air Balancing Training



# Unparalleled Procedures and Results