



Test & Balance Engineer (TBE) Exam Requirements & Study Guide

Test & Balance Engineer (TBE) Scope

The TBE program recognizes test and balance professionals who demonstrate the technical understanding required for competent performance.

AABC's TBE certification is available to test and balance professionals who have met the education/experience prerequisites and who pass the examination to demonstrate competence in the areas of TAB Project Management, Air Systems, Hydronic Systems, Psychrometrics and Heat Transfer, Electrical Systems, and Sound & Vibration.

Applying for TBE Certification

Eligibility Criteria

Applicants for TBE certification must submit the [TBE Application Form](#) and satisfy one of the following two options to meet the required 8 years of education/experience:

- A. ***Applicants with Engineering degrees:*** graduation from an engineering school or college counts as four (4) years of experience. Each year of training after graduation, as a prospective TBE, counts as one (1) year of experience. Mechanical Engineering graduates must have completed four (4) years of engineering school, plus at least four (4) years of field experience working for a TAB firm, to be eligible for certification.
- B. ***Applicants without Engineering degrees:*** each year of engineering school completed will count as one (1) year of experience; for each year of practice in the field of air conditioning, the person shall be given one (1) year's credit. In order to be eligible for certification, the applicant must have eight (8) year's credit, consisting of at least five (5) years of field experience in system testing and balancing.

Application Instructions and Requirements

The completed application and payment may be submitted via email (info@aabc.com) or via paper copy to:

AABC Certification Department
1015 18th Street NW, Suite 603
Washington, DC 20036

Preparing for the TBE Examination

Exam Content Outline

Domain/Objective	Weight
TAB Project Management	8%
Apply procedural knowledge required to perform pre-TAB analysis	
Apply procedural knowledge required to perform project inspections and determine when each system in the building can be tested	
Ensure safety requirements are met	
Explain and comply with TAB-related commissioning requirements	
Demonstrate aspects of final TAB report preparation and evaluation	
Air Systems	43%
Define terminology and technical definitions related to air systems	
Apply knowledge required to test and balance air system performance	
Apply knowledge to test and balance healthcare and laboratory systems	
Apply procedural knowledge required to use test instrumentation related to air systems	
Evaluate data and resolve deficiencies related to air systems	
Hydronic Systems	23%
Define terminology and technical definitions related to hydronic systems	
Apply knowledge required to test & balance hydronic system performance	
Apply procedural knowledge req'd to use test instrumentation related to hydronic systems	
Evaluate data and resolve deficiencies related to hydronic systems	
Psychrometrics and Heat Transfer	13%
Define terminology and technical definitions related to psychrometrics and heat transfer	
Apply knowledge required to test coil performance	
Apply knowledge required to use a psychrometric chart	
Evaluate data according to psychrometric principles and resolve deficiencies related to psychrometrics and heat transfer	
Electrical systems	8%
Define terminology and technical definitions related to electrical systems	
Apply knowledge required to test electrical components	
Apply procedural knowledge required to use appropriate test instrumentation related to electrical systems	
Evaluate data and identify deficiencies related to electrical systems	
Sound and Vibration	5%
Define terminology and technical definitions related to sound and vibration	
Apply knowledge required to test sound levels	
Apply knowledge required to test HVAC equipment vibration levels	

TBE Exam Reference List

The following references were used to develop the TBE certification examination.

- *AABC National Standards for Total System Balance*, 7th Edition
- *AABC Technician Training Manual*, 3rd Edition
- *Kahoe Test & Balance Field Manual*, 3rd Edition

Note: These are also the reference books that you may bring to the exam with you.

Taking the TBE Exam

What to Expect on Exam Day

The exam consists of 95 questions, a combination of multiple choice and calculation questions that require a single numerical answer. A total of eight (8) hours is allowed for the exam, and the passing score is currently 68%.

****IMPORTANT NOTE:** Exam questions that require a numerical answer have specific instructions for the correct number of decimal places to enter. You **MUST** follow these instructions carefully in order for the exam software to give you proper credit.

The exam is open book, however candidates are limited to a copy of the AABC National Standards, the Technician Training Manual, Kahoe Test & Balance Field Manual, and the EAB Equation Quick Guide. A psychrometric chart and other similar aids will be provided.

Candidates should bring their own scientific, non-programmable calculator for use during the exam. (**NOTE:** for test security reasons, ***no other electronics are permitted in the testing room under any circumstances*** – this includes mobile phones, laptops, or any other device.)

Identification

Candidates are required to present a valid, government issued, photo identification to gain admission to the examination site. Acceptable identification is an unexpired government-issued photo ID with a signature (examples include driver's license, passport, citizenship card, age of majority card, and military ID card). The name on the ID must match the applicant name and the photo on the ID must validate the applicant's identity. Candidates without acceptable ID will not be admitted.

Examination Rules

The following rules will be enforced on exam day:

- Candidates must arrive at least 15 minutes prior to the scheduled start of the exam. Late arrivals may not be accommodated. Fees are not refunded for missed exam appointments.
- Candidates must present acceptable identification. Please see the “Identification” section above.
- Candidates will be observed at all times during testing and should be aware that security procedures are in place and will be enforced.
- Other than non-programmable calculators, candidates may not bring any electronic devices, or any devices capable of recording, into the examination area. Phones, backpacks, purses, and other personal items are NOT permitted. Candidates are encouraged to leave these items at home when possible.
- Candidates may not communicate with anyone except the proctor during the exam.
- Candidates should complete their exams quietly, without disturbing others.
- All candidates are expected to answer the exam questions independently. There is to be no sharing of information, teamwork, or any other collaborative relationship with another candidate during the exam. Any violation of this policy is considered to be cheating.
- No exam questions are to be discussed during or after the exam administration. Any infraction of these terms is considered to be a violation of your ethical responsibilities and subject to the disciplinary policy. It is also a violation of copyright law and exam security.
- Proctors are not permitted to answer any questions about the content of the examination. Proctors may answer questions about processes (e.g. time limit), but cannot interpret or explain any information on the exam.

NOTE: AABC has invested substantial resources into the development of the exam, and expects all members and potential members to respect the integrity and confidentiality of the exam.

Any attempts to copy, reproduce, or transmit to others all or any part of the TBE exam, by electronic or other means, are expressly prohibited. The AABC Board of Directors may impose disciplinary action up to and including permanent revocation of membership and certification for substantiated allegations.