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INSPECTION • TESTING • CERTIFICATION



CANDIDATE INFORMATION BULLETIN

Medical Gas Installer/Brazer Certification Examination

SECTION ONE

ABOUT NITC

National Inspection Testing Certification (NITC) is a third-party provider of certification services to the Piping Industry. NITC tests and certifies personnel in the Plumbing, Piping, HVACR and Related Piping Industries. NITC also specializes in Test Development and Test Administration and offers a large number of personnel certifications that include but are not limited to Journey and Mastery Levels, Medical Gas, IAPMO Voluntary Plumbing and Mechanical Inspector, and assorted City, County and State Government requirements. NITC is non-discriminatory in

accepting applications and issuing certifications to candidates without regard to membership in any trade, association, union, etc. NITC is in compliance with Federal and State ADA regulations.

Important note to examination candidates:

The information contained in each section of this document is important and is provided to help ensure your success. Please be sure to read all of it very carefully.

ABOUT OUR MEDICAL GAS SYSTEMS PERSONNEL CERTIFICATION PROGRAM

For many years the certification of medical gas systems personnel has been a voluntary effort except where required by an employer or by the local jurisdiction. However, new government and industry requirements continue to emerge asking that medical gas systems personnel document their qualifications through written test and/or practical testing. NITC is the clear leader in providing medical gas systems personnel certification which meets these needs while holding to the highest standards of modern test practice. NITC's medical gas systems personnel certification program is nationally recognized and internationally accredited and is the result of years of effort by experts from the medical gas industry. The subject matter experts who participate in the development of these certifications represent many thousands of hours of experience in the installation, inspection, instruction, maintenance, and/or verification of medical gas systems. The goal of these volunteers is improving the safety of those who come into contact with medical gas and vacuum equipment as either an industry worker, or as a consumer of medical care.

To attain and maintain the high level of quality required to achieve a scope of accreditation under ANSI/IEC 17024, NITC has teamed with test professionals from West Coast Analytics (Los Angeles, CA) and Professional Testing, Inc (Orlando, FL). The services of each have been valuable supplements to NITC's own internal staff of experienced test development and delivery specialists in ensuring the continuing validity of NITC's Medical Gas examinations.



ABOUT THE EXAMINATION DEVELOPMENT

The first step in the development of an objective test is to identify the knowledge necessary for the certification holder. In the case of medical gas systems personnel this knowledge was identified by a team of industry experts* assembled by the American Society of Sanitary Engineering (ASSE). ASSE's meeting of industry experts resulted in the publication of **ASSE Series 6000, Professional Qualifications Standard for Medical Gas Systems Personnel**, an American National Standard (ANSI).** **The ASSE Series 6000** is based on the requirements of NFPA Standard 99 – Health Care Facilities which covers requirements for health care and fire safety typically found in hospitals, ambulatory care centers, clinics, medical and dental offices, nursing homes, and limited care facilities. **The ASSE Series 6000** includes standards for medical gas personnel including Vacuum System Specialists, Installers, Inspectors, Verifiers, Maintenance Personnel, and Instructors, and for Bulk System Installers and Instructors.

Important Note to all Industry Stakeholders:

If you are a stakeholder who employs individuals in any arena in which NITC provides certifications, NITC would like to ask you to complete a very brief survey. This can allow you to anonymously share your industry knowledge, concerns, and/or kudos. Please [click here](#) to choose your area of interest.

Using the knowledge categories identified in the **ASSE 6000 Series** NITC developed an industry survey that was distributed to a representative number of medical gas systems personnel from each specialty. The results validated the accuracy and completeness of the knowledge recommended by the ASSE group of experts. Test content specifications and test blueprints were then generated and, before final release, the resulting test blueprints were reviewed and approved by focus groups of highly qualified medical gas subject matter experts. The passing scores were also determined by these subject matter experts using psychometrically accepted standard-setting methodology.

*See **ASSE Series 6000, Professional Qualifications Standard for Medical Gas Systems Personnel** for a list of the subject matter experts (SMEs) who participated in the development of the standards.

**Background: The ASSE Standards

The **ASSE Series 6000, Professional Qualifications Standard for Medical Gas Systems Personnel** is an ANSI standard developed using a consensus based process. ASSE is dedicated to the preservation of public health and safety through "Prevention Rather Than Cure." The forward to the standards states, "The ASSE Standards Program systematically evaluated new technologies through formal requests and addresses the development and promulgation of performance and qualifications standards designed to safeguard public health and safety. " The standards were developed to allow regulatory officials and states to have uniform minimum requirements for qualified Medical Gas Systems Installers, Medical Gas Systems Inspectors, Medical Gas Systems Verifiers, and Medical Gas Systems Instructors. In addition, the standards were developed to give uniform requirements for third-party certifiers

(such as NITC) so that individuals can be qualified to install, inspect, verify or teach classes on medical gas and vacuum systems. The ASSE standards were promulgated in accordance with procedures developed by ANSI. This included the involvement of stakeholders and the opportunity for stakeholder input.

SECTION TWO

SCOPE OF WORK: MEDICAL GAS INSTALLER

A Medical Gas Installer certification candidate is a qualified individual who can demonstrate competence within their scope and will be proficient in and experienced in the installation of medical gas and vacuum systems covered by the ASSE 6000 standard. Installers include anyone who works on or installs piping or components, including brazers. A qualified Medical Gas Installer may perform these tasks alone, or through the supervision of other individuals.

In addition to knowledge of product installation, a Medical Gas Installer is required to have a general knowledge of the applicable laws, codes, rules, listing agencies, and regulations from the federal, state, and local levels pertaining to medical gas and vacuum systems as well as knowledge of product performance, system and system component testing, documenting and recording, and medical gas terminology.

Medical gas systems and equipment covered in the ASSE 6000 standard include health care facilities within the scope of NFPA 99 Standard for Health Care Facilities. Medical gas piping systems include vacuum piping.

EXAMINATION QUALIFICATION REQUIREMENTS

The candidate shall have a minimum of four (4) years of documented practical experience in the installation of piping systems. Certification shall include the successful completion of a minimum 32-hour training course conducted by a Medical Gas Systems Instructor certified to ASSE 6050, and passing grades on (1) a multiple-choice examination covering all facets of ASSE Standard 6000, NFPA 99, and NFPA 55 and (2) a proctored practical (brazing) examination.

This certification is administered in accordance with the American Society of Sanitary Engineers (ASSE) Series 6000. Copies of this standard may be obtained by contacting ASSE at (440) 835-7040, or at www.asse-plumbing.org.

ABOUT THE EXAMINATION

The medical gas installer/brazer certification examination consists of two portions: a proctored, closed book multiple-choice examination with one hundred (100) questions, and a brazing examination. Both the multiple-choice and brazing portions of this examination and their continuities must be registered through NITC to maintain a valid certification.

The multiple-choice portion contains 100 questions. Candidates must correctly answer seventy-seven percent 77% of the questions to achieve a passing grade. The multiple-choice portion is based on information contained in the NFPA 99, NFPA 55, and the ASSE Series 6000 Standard. The questions are designed so that the average candidate will be able to complete the examination within two hours. A content outline is provided below as an aid in preparing for the exam.

Examination Name: Medical Gas Installer/Brazer Certification Examination

Official Exam References:

1. ASSE/IAPMO/ANSI Standard Series 6000-2006
2. NFPA 99 Standard for Health Care Facilities, 2005 Edition
3. NFPA 55 Compressed Gases and Cryogenic Fluids Code

Description: Closed book exam consisting of 100 multiple-choice questions

Passing grade: 77% (77 correct)

Total time allowed: two (2) hours

Percent of Exam	Domain Area
16%	Product performance knowledge
26%	Product installation knowledge
18%	Testing System and System Components
14%	Conducting, documenting and recording inspections and tests
26%	General medical gas knowledge

For the brazing portion of the examination, candidates must successfully pass a proctored brazing examination in accordance with the American Society of Mechanical Engineers (ASME) Section IX, Welding and Brazing Qualifications Standard. The brazing portion of the medical gas installer’s certification requires that the candidate braze two joints of a horizontal coupling and two up-flow joints of a vertical coupling. The copper tube shall be 1 ½” NPS (Type “L”) and the coupling shall be 1 ½” standard “stop” coupling. The braze coupons are examined by American Welding Society (AWS) certified welding inspectors (CWI’s) to the ASME section IX brazing performance qualification standard.

An NITC-approved proctor administers the multiple-choice portion of the examination. A Contractor or Manufacturer representative and an NITC authorized testing representative must witness the brazing portion at approved testing locations. Candidates are notified of a pass or fail result in writing by NITC, the training agency, or by the association that requested the examination.

Candidates failing to achieve a passing score will be eligible for re-examination as soon as the next examination is scheduled. Candidates may re-take their examination at the NITC offices or at an ACT testing centers. Brazing examinations must be taken at an approved welding/brazing testing facility. Re-examination fees are listed in [Section Three](#) of this bulletin.



RENEWAL OF CERTIFICATION

This certification is valid for three (3) years from the issuance, as long as the brazing portion of the registration is kept current.

Renewal of the multiple-choice portion of this certification can be accomplished by successfully passing an open book examination within thirty days of the expiration date of certification. This examination contains forty questions which are based on the most current editions of the NFPA 99, NFPA 55 and ASSE Series 6000 Standards/Codes.

The renewal test can be taken by either of two methods.

- (1) For a fee of \$31.50 take a computer-based renewal exam online at www.testrac.com/nitc. A Testrac ID and PIN is required. Those can easily be obtained by going to www.testrac.com/nitc and selecting STEP 2, or by contacting the NITC office. Four (4) hours are allowed for the exam and results will be provided immediately at the completion of the exam.
- (2) For a fee of \$42.00 take a paper-based version of the renewal exam. This exam may be mailed to a certified individual, or sent to a training agency, employer, or association to be administered. After the completed exam is returned to NITC it may take up to 30 days to receive the new card by mail. Contact NITC after 30 days have passed if the new card has not arrived.

Important note about certification renewal:

This certification is valid for three (3) years from issuance as long as both the examination and the brazing portions of the registration are kept current.

Certification holders are responsible for keeping their certification current. NITC must be notified of any change in address. Changes may be made online, by telephone, or by mail.

Renewal candidates are encouraged sign up for the easy to use computer-based renewal exam.

Renewal candidates are encouraged to use the computer-based system.

Certified individuals, who have not renewed their certification within thirty days after the expiration date, must take the proctored one hundred question multiple-choice examination.

Renewal of the brazing portion of this certification can be accomplished by either of the following two methods:

- (1) Certified persons who have brazed a joint at least once within six months (180 days) may submit a continuity of brazing form per ASME Boiler and Pressure Vessel Code, Section IX performance qualifications (QB322) to NITC. This form must be received by NITC prior to the expiration date of the brazing certification. The continuity letter must be on contractor letterhead, must have a date of most recent brazement on or before the expiration date, and must be signed by a contractor representative. For more Instructions and a sample letter please see Braze Continuity Letter Direction (WI 7.2-29) located on our website www.nationalnitc.com or contact our office.

- (2) Online Braze continuity submittal (username and password required.) Only an authorized representative of an employer may submit proof that the brazer has used the brazing process within a six month period. If the person submitting continuities online is not authorized, the brazer’s certification will be declared invalid. The braze continuity form must be filled out correctly and kept in the brazers file. Payment of \$21.50 for each continuity must be made to complete the continuity process. Contact the NITC office for more information.
- (3) Certified persons who have not brazed a joint within a six (6) month time period from date of issuance of the certification must recertify by successfully performing a brazing qualification. A Contractor or Manufacturer representative and an NITC authorized testing representative must witness the certified person brazing one side of a vertical joint in the “up-flow” position. The same type of copper tube, coupling and process used in the initial brazing examination must be used. The sample braze must be submitted to NITC along with a QB 484 form (form # 720-115) and a \$43.00 fee.

SECTION THREE

APPLICATION PROCEDURES

Candidates must complete an application in advance and return it to the NITC office. In addition to information that verifies eligibility, the application contains a code of conduct that certified persons must abide by and the regulations for suspension or withdrawal of the certification. Applications can be obtained from the NITC office or from the NITC website at www.nationalitc.com. Walk-in candidates will be accepted at the discretion of the proctor. A walk-in affidavit and an examination application must be completed. All fees must be paid before results are released.

TABLE OF FEES FOR ALL NITC MEDICAL GAS EXAMINATIONS

All fees due must be submitted with a completed application.

EXAMINATION FEES

Multiple-choice exam with a proctor (Processing may be applied)	\$108. ⁰⁰
Computer-based multiple-choice exam with a proctor (Processing may be applied)	\$108. ⁰⁰
Computer-based multiple-choice exam at ACT center	\$108. ⁰⁰
RETEST multiple-choice exam (Processing may be applied)	\$108. ⁰⁰
RETEST computer-based multiple-choice exam with a proctor (Processing may be applied)	\$108. ⁰⁰
RETEST computer-based multiple-choice exam at ACT center	\$108. ⁰⁰
RETEST practical exam only (with NO retest on the multiple-choice portion) (Processing may be applied)	\$ 66. ⁵⁰
ACT test center cancellations and rescheduling fee (if cancellation occurs with less than 48 hours notice)	\$ 45. ⁰⁰
Braze re-qualifications (Vertical Upflow) (Processing may be applied)	\$ 43. ⁰⁰

RENEWAL FEES

Renewal by mail (pencil paper test)	\$ 42. ⁰⁰
Renewal Test online at TestTrac.com	\$ 31. ⁵⁰

Braze continuity submittal - Mail-in	\$ 33. ⁰⁰
Braze continuity submittal - Online	\$ 21. ⁵⁰

OTHER FEES

Processing fee for group examinations involving less than ten (10) candidates:	for paper pencil exams	\$250. ⁰⁰
	for computer-based exams	\$150. ⁰⁰
For duplicate of the wall certificate		\$ 15. ⁰⁰
For duplicate of the wallet-sized photo ID card		\$ 15. ⁰⁰

EXAMINATION SCHEDULING FOR GROUPS

Examinations are scheduled and administered at specific times, dates and locations as required by clients. To request an exam for a group of ten (10) or more candidates submit an examination request form to NITC at least two (2) weeks in advance along with the completed applications. The Instructors name and certification number must be included on the request form.

For groups of less than ten (10) candidates a processing fee will be added. The fee is \$250 for paper pencil exams, and \$150.00 for computer-based exams. All fees must be paid prior to the examination, fees are non-refundable. (See NITC No-show, Cancellation, Refund Policy.) It is the responsibility of the instructor or the requesting entity to notify each applicant of the scheduled examination.

Please contact NITC for more information about examination scheduling.

ACT COMPUTER-BASED TESTING INFORMATION

Computer-based testing at ACT centers is available for individuals unable make the scheduled examination with the training agency. There are more than 200 ACT centers throughout the United States where the examination can be taken a time and place that is convenient for the candidate. The content of the computer-based multiple-choice test is identical to that of the written multiple-choice examination.

Go to www.nationalitc.com or www.act.org/actcenters/locate to locate an ACT TESTING center. Once the application has been submitted, contact NITC to provide payment information. For exams given at ACT centers an email address must be provided. ***Application will not be processed until payment has been received.***

Login information for scheduling the exam date and time will be provided via an email from ACT Test Registration.

For any test scheduled at an ACT center, cancellation and rescheduling must be made at least 48 hours prior to the assigned time or date or a rescheduling fee will be assessed.

Important note about electronic scoring of NITC examinations:

Since the pencil paper examinations are electronically scored after being returned to the offices of NITC it is important to record all on the scannable answer sheet provided at the testing site. Answers marked in any test booklet will NOT be counted toward a candidate's score.

EXAMINATION SCORES

For computer-based tests, results are provided to the examinee at the completion of the exam. For paper pencil tests, results will be sent within 30 days to the person or entity who originally requested the exam. Passing scores represent absolute standards as determined by panels of content experts using psychometrically accepted standard-setting methodologies.

EXAMINATION SITE INFORMATION

Candidates will be required to sign a test site roster and show photo identification to the proctor at the test site on the day of the exam administration. Acceptable forms of photo identification are a passport, a government-issued driver's license or state ID, or a work identification card with photo. Candidates without appropriate identification documents will NOT be admitted to take the certification examination.

It is suggested that exam candidates bring a hand held pencil sharpener, an eraser, and a silent, battery-operated, non-printing, non-programmable calculator. (A non-programmable calculator does NOT have a full alphabetical keyboard). All other electronic devices (such as cell phones & palm pilots) are prohibited. **NOTE: No PDAs, cellular telephones, wrist watches, or any other types of devices that record data are allowed to be used during the examination.**

Note: *Materials will not be available at the testing site. No reference books, standards, code books, handbooks, computers, notebooks, audio/visual devices, recorders, illustrated books, notes, drawings or papers of any kind will be allowed in the testing facility.*

SPECIAL REQUESTS FOR TAKING THE EXAMINATION

Requests for special/emergency examinations will be accommodated by NITC if possible. Candidates that have a disability that restricts their ability to take an examination under the standard conditions may request special testing arrangements. Such requests must accompany the application, and must be received by the normal application closing date. The request should indicate the nature of the disability and the special accommodations needed. Verification of both the disability and the need for special accommodations by a licensed medical professional may be required. Additional information on special accommodations can be found in Section XVI of the NITC [Rules and Procedures Manual](#), available for download from our web site at www.nationalitc.com.

NITC NO-SHOW, CANCELLATION and REFUND POLICY

CREDITS: NITC will issue a credit to no shows, cancellations, etc. The credit, redeemable for six months, will be issued to the group or individual for the next available examination. It is the responsibility of the group or individual to keep track of their credit and its expiration date in six months.

Example: A group requested 30 examinations and only 27 candidates showed up. A credit for 3 candidates will be given to the group for the next examination.

REFUNDS: Requests for refunds must be received in writing. Refunds will be given only upon approval from the Executive Vice President. Partial refunds will be \$55.00 on the one-hundred

question examinations, and 50% of the fee for all other examinations. Full refunds will only be given as a result of uncontrollable events such as severe weather, airline flight cancellations, etc. Candidates withdrawing or canceling after the deadline or not sitting for the examination will forfeit all application fees and will NOT receive a refund.

QUESTION COMMENT/CHALLENGE PROCEDURE

Challenge forms provided in the proctor's examination package may be used for both comments and question challenges. At the conclusion of the examination, a candidate may comment on the site, the process, or on any question. Comments and suggestions are always welcome. To challenge a question or questions, a candidate must request the question challenge form from the proctor, complete the form providing as many details as possible. The completed form must be turned in to the proctor before leaving the room. An examinee may file a question challenge at a later time so long as it is in writing, identifies the question being challenged, contains a separate and complete statement of each ground upon which the challenge is based, and is received by NITC not later than 30 days from the receipt of examination score. Additional details on the process are provided in NITC's [Rules and Procedures document Manual](#), available at NITC's web site.

EXAMINATION SCORES

For computer-based tests, results are provided to the examinee at the completion of the exam. For paper-based tests, results will be sent within 30 days to the person or entity who originally requested the exam. Passing scores represent absolute standards as determined by panels of content experts using psychometrically accepted standard-setting methodologies.

INFORMATION RELEASE POLICY

NITC may release any information regarding a candidate's examination application or administration to any employer, regulatory agency or any other person or entity that may inquire in writing to the Commission. Although the name and certification status of individuals who hold current NITC certifications may be published, NITC will discuss score-related matters with the candidate or the candidate's training agency, employer, or legal representative only.

APPEALS PROCEDURE

Candidates may appeal the score of an examination. Appeals shall be filed in writing to the NITC office via U.S. Mail, facsimile, or E-mail no later than thirty (30) days from the date candidate receives the score. Appellants will be notified in writing of the decision by the certification committee. The complete NITC appeals procedure can be found in the NITC [Rules and Procedures Document](#).

ISSUANCE OF WALL CERTIFICATES AND CERTIFICATION CARDS

Upon successful completion of this certification examination, a certificate and wallet size ID card will be issued. This certification is valid for three (3) years from issuance. Certification holders are responsible for keeping their certification current. **NOTE: IN SOME CASES A WALL CERTIFICATE AND/OR WALLET CARD WILL BE ISSUED BY A CITY, COUNTY, STATE, INDUSTRY ASSOCIATION, OR UNION.**

If a photo ID card is preferred, photos may be supplied in hard copy or in digital form. In either case, please include the certification holder's full name, NITC identification number, and certification type, and follow the specific instructions shown below.

- **Hard copy photo instructions:** Any photo mailed to NITC for this purpose must be an **uncut passport-sized photo** with the full name, NITC identification number, and certification type clearly print on the back.
- **Digital photo instructions:** Digital photos in either bitmap (.bmp) or jpeg (.jpg) format will be accepted if mailed to NITC on a flash drive, CD or other common digital media. Emailed photos may be sent to photos@nationalitc.com. Whether using mail or email, please include full name, NITC identification number, and certification type.

NITC will not be responsible for expenses associated with the photo. Digital media or hard copy photos mailed to NITC will not be returned to sender. . Please contact NITC if you have additional questions about photo submittal.

A fifteen dollar (\$15.00) fee will be assessed for requesting a duplicate of either the wall certificate or wallet-sized photo ID card.

HOW TO OBTAIN THE NITC RULES AND PROCEDURES DOCUMENT

The Medical Gas Installer Certification is governed by the [Rules and Procedures document](#). This document goes into greater detail on a number of the topics covered in this examination information bulletin. Topics covered include:

- Guidelines for Use of Certification Mark
- Re-issuance of Lost Certification Card
- Issuance of Certification Cards and Wall Certificates
- Proctor Information
- Challenge of Questions and Appeals Procedure
- Conflict of Interest and Confidentiality Statements
- Notification to Certified Personnel and Stakeholders of Updated
- Correction of Material / Technical Error in Examinations
- NITC ADA Policy
- NITC Certification Scheme Committee

Copies of NITC's [Rules and Procedures document](#) are available on the NITC website at www.nationalitc.com and also upon request from NITC Headquarters.