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<https://test-takers.psiexams.com/ctot>

*Before paying for  
your examination registration,  
be sure you understand  
the contents of this bulletin.  
Please retain and use it as a reference  
when contacting PSI.*

## CONNECTICUT DEPARTMENT OF CONSUMER PROTECTION

### OCCUPATIONAL LICENSING HEATING, PIPING AND COOLING TRADES CANDIDATE INFORMATION BULLETIN

Please refer to our website to check for the most updated information at <https://test-takers.psiexams.com/ctot>

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## CONNECTICUT EXAMINATION PROCEDURE CHECKLIST

**Before registering for an examination, make sure that you have reviewed the following checklist.**

**Prepare for your examination(s):**

- Use the examination content outlines provided in this bulletin as the basis of your study.

**Schedule your examination(s):**

- Once you are eligible, it is your responsibility to contact PSI to pay and schedule. You may go online at <https://test-takers.psiexams.com/ctot> or call (855) 746-8171.

**Take your examination(s):**

- Must bring one form of identification, which bear your signature and photograph.
  - ↳ Your name as shown on the application form must exactly match the name on the photo I.D. used when checking in at the examination site.
- Arrive 30 minutes prior to appointment.

**After your examination(s):**

- Submit the licensing fee indicated on the passing score report for your trade examination with all passing score reports to the Connecticut Department of Consumer Protection.

## EXAMINATIONS BY PSI SERVICES LLC

This Candidate Information Bulletin provides you with information about the examination process for Occupational Licensure in the State of Connecticut.

Connecticut State law requires Occupational Licensure to be licensed and regulated by the Connecticut Department of Consumer Protection. Eligibility for examination is determined by the State.

The State has contracted with PSI Services LLC (PSI) to conduct its examination program. PSI provides examinations through a network of computer examination centers in Connecticut. PSI works closely with the State to be certain that examinations meet local as well as national requirements in basic principles and examination development standards.

## EXAMINATION SCHEDULING PROCEDURES

### ELIGIBILITY AND FEES

- Journeyperson/Technician/Drillers are required to pass only a trade portion for licensure License:
  - You may take examinations on an unlimited basis for up to one year from the date of eligibility.
- Contractor/Home Inspector/Dealer-Techs are required to pass both a trade portion and business portion for licensure.
  - You may take examinations on an unlimited basis.
  - Any portion score is valid for a period of 2 years from the date it was passed. For example, a contractor that passes the business examination portion has 2 years to pass the trade examination portion, before being required to retake that business portion again.
  - Any existing Contractor/Home Inspector/Dealer-Tech seeking an additional license, and has NOT passed their business examination portion in the past 2 years, is required to **RETAKE** the business examination portion (plus the new trade examination portion) in order to get the new license.
  - Any existing Contractor/Home Inspector/Dealer-Tech seeking an additional license, and has passed the business examination portion within the past 2 years, is required to take only the trade examination portion.

All eligibilities are valid for a period of 1 year from the date that the State approves your application. The bulletin advises that you don't wait until the end of your eligibility period to register.

The following fee table lists the applicable fee for each portion. The fee is for each portion, whether you are taking the examination for the first time or repeating.

Each Examination Portion	\$59
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**NOTE: REGISTRATION FEES ARE NOT REFUNDABLE OR TRANSFERABLE**

## INTERNET SCHEDULING

For the fastest and most convenient examination scheduling process, PSI recommends that you register for your examinations using the Internet. You register online by accessing PSI's registration website at <https://test-takers.psiexams.com/ctot>. Internet registration is available 24 hours a day.

Log onto PSI's website and select Sign in / Create Account. Select Create Account. You are now ready to pay and schedule for the exam. Enter your zip code and a list of the testing sites closest to you will appear. Once you select the desired test site, available dates will appear.

## TELEPHONE SCHEDULING

For telephone registration, you will need a valid credit card (Visa, MasterCard, American Express or Discover).

PSI registrars are available at (855) 746-8171, Monday through Friday between 7:30 am and 10:00 pm, and Saturday-Sunday between 9:00 am and 5:30 pm, Eastern Time, to receive your payment and schedule your appointment for the examination.

## CANCELING AN EXAMINATION APPOINTMENT

You may cancel and reschedule an examination appointment without forfeiting your fee if your *cancellation notice is received 2 days before the scheduled examination date*. For example, for a Monday appointment, the cancellation notice would need to be received on the previous Saturday. You may call PSI at (855) 746-8171, or use the PSI website.

**Note: A voice mail message is not an acceptable form of cancellation. Please use the PSI Website or call PSI to speak directly to a Customer Service Representative.**

## SCHEDULING A RE-EXAMINATION

It is not possible to make a new examination appointment on the same day you have taken an examination; this is due to processing and reporting scores. A candidate who tests unsuccessfully on a Wednesday can call the next day, Thursday, and retest as soon as Friday, depending upon space availability. You may access a registration form at <https://test-takers.psiexams.com/ctot>. You may also call PSI at (855) 746-8171.

## MISSED APPOINTMENT OR LATE CANCELLATION

Your registration will be invalid, you will not be able to take the examination as scheduled, and you will forfeit your examination fee, if you:

- Do not cancel your appointment 2 days before the schedule examination date;
- Do not appear for your examination appointment;
- Arrive after examination start time;
- Do not present proper identification when you arrive for the examination.



## EXAM ACCOMMODATIONS

All PSI examination centers are equipped to provide access in accordance with the Americans with Disabilities Act (ADA) of 1990, and exam accommodations will be made in meeting a candidate's needs. A candidate with a disability or a candidate who would otherwise have difficulty taking the examination should request for alternative arrangements by [Clicking Here](#).

Candidates granted accommodation in accordance with the ADA, **MUST** schedule their examination by telephone and speak directly with a PSI registrar.

### EXAMINATION SITE CLOSING FOR AN EMERGENCY

In the event that severe weather or another emergency forces the closure of an examination site on a scheduled examination date, your examination will be rescheduled. PSI personnel will attempt to contact you in this situation. However, you may check the status of your examination schedule by calling (855) 746-8171. Every effort will be made to reschedule your examination at a convenient time as soon as possible. You may also check our website at <https://test-takers.psiexams.com/ctot>.

### SOCIAL SECURITY NUMBER CONFIDENTIALITY

PSI will use your social security number only as an identification number in maintaining your records and reporting your examination scores to the state. A Federal law requires state agencies to collect and record the social security numbers of all licensees of the professions licensed by the state.

## **EXAMINATION SITE LOCATIONS**

The PSI Occupational Licensing examinations are administered at the examination centers listed below:

**West Hartford**  
1245 Farmington Ave, Suite 203  
West Hartford, CT 06107

**Milford**  
500 BIC Drive  
Suite 105  
Milford, CT 06461

**Auburn**  
48 Sword St, Unit 204  
Auburn, MA 01501

**Boston**  
56 Roland St., Suite 305  
Washington Crossing  
Charlestown, MA 02129

**Fall River**  
218 South Main St, Suite 105  
Fall River, MA 02721

**Springfield**  
1111 Elm Street, Suite 32A  
West Springfield, MA 01089

Additionally, PSI has examination centers in many other regions across the United States. You may take this examination at any of these locations. Once you have paid for the examination, enter your zip code and a list of the testing sites closest to you will appear.

## **REPORTING TO THE EXAMINATION SITE**

On the day of the examination, you should arrive at least 30 minutes before your appointment. This extra time is for sign-in, identification, and familiarizing you with the examination process. *If you arrive late, you may not be admitted to the examination site and you will forfeit your examination registration fee.*

### REQUIRED IDENTIFICATION AT EXAMINATION SITE

Candidates need to provide one (1) form of identification.

Candidates must register for the exam with their LEGAL first and last name as it appears on their government issued identification. The required identification below must match the first and last name under which the candidate is registered. Candidates are required to bring one (1) form of a valid (non-expired) signature bearing identification to the test site.

### REQUIRED IDENTIFICATION (with photo) - Choose One

- State issued driver's license
- State issued identification card
- US Government Issued Passport
- US Government Issued Military Identification Card
- US Government Issued Alien Registration Card
- Canadian Government Issued ID

NOTE: ID must contain candidate's photo, be valid and unexpired.

### SECURITY PROCEDURES

The following security procedures will apply during the examination:

- Only non-programmable calculators that are silent, battery-operated, do not have paper tape printing capabilities, and do not have a keyboard containing the alphabet will be allowed in the examination site.
- Candidates may take only approved items into the examination room.
- All personal belongings of candidates should be placed in the secure storage provided at each site prior to entering the examination room. Personal belongings **include, but are not limited to**, the following items:
  - **Electronic devices of any type, including cellular / mobile phones, recording devices, electronic watches, cameras, pagers, laptop computers, tablet computers (e.g., iPads), music players (e.g., iPods), smart watches, radios, or electronic games.**
  - **Bulky or loose clothing or coats** that could be used to conceal recording devices or notes. For security purposes outerwear such as, but not limited to: open sweaters, cardigans, shawls, scarves, vests, jackets and coats are not permitted in the testing room. **In the event you are asked to remove the outerwear,**



appropriate attire, such as a shirt or blouse should be worn underneath.

- **Hats or headgear not worn for religious reasons** or as religious apparel, including hats, baseball caps, or visors.
- **Other personal items**, including purses, notebooks, reference or reading material, briefcases, backpacks, wallets, pens, pencils, other writing devices, food, drinks, and good luck items.
- Although secure storage for personal items is provided at the examination site for your convenience, PSI is not responsible for any damage, loss, or theft of any personal belongings or prohibited items brought to, stored at, or left behind at the examination site. PSI assumes no duty of care with respect to such items and makes no representation that the secure storage provided will be effective in protecting such items. If you leave any items at the examination site after your examination and do not claim them within 30 days, they will be disposed of or donated, at PSI's sole discretion.
- Person(s) accompanying an examination candidate may not wait in the examination center, inside the building or on the building's property. This applies to guests of any nature, including drivers, children, friends, family, colleagues or instructors.
- No smoking, eating, or drinking is allowed in the examination center.
- During the check in process, all candidates will be asked if they possess any prohibited items. Candidates may also be asked to empty their pockets and turn them out for the proctor to ensure they are empty. The proctor may also ask candidates to lift up the ends of their sleeves and the bottoms of their pant legs to ensure that notes or recording devices are not being hidden there.
- Proctors will also carefully inspect eyeglass frames, tie tacks, or any other apparel that could be used to harbor a recording device. Proctors will ask to inspect any such items in candidates' pockets.
- If prohibited items are found during check-in, candidates shall put them in the provided secure storage or return these items to their vehicle. PSI will not be responsible for the security of any personal belongings or prohibited items.
- Any candidate possessing prohibited items in the examination room shall immediately have his or her test results invalidated, and PSI shall notify the examination sponsor of the occurrence.
- Any candidate seen giving or receiving assistance on an examination, found with unauthorized materials, or who violates any security regulations will be asked to surrender all examination materials and to leave the examination center. All such instances will be reported to the examination sponsor.
- Copying or communicating examination content is violation of a candidate's contract with PSI, and federal and state law. Either may result in the disqualification of examination results and may lead to legal action.
- Once candidates have been seated and the examination begins, they may leave the examination room only to use the restroom, and only after obtaining permission from the proctor. Candidate will not receive extra time to complete the examination.

## TAKING THE EXAMINATION BY COMPUTER

The examination will be administered via computer. You will be using a mouse and computer keyboard.

### TUTORIAL

Before you start your examination, an introductory tutorial is provided on the computer screen. The time you spend on this tutorial, up to 15 minutes, DOES NOT count as part of your examination time. Sample questions are included following the tutorial so that you may practice answering questions and reviewing your answers.

### TEST QUESTION

One question appears on the screen at a time. During the examination, minutes remaining will be displayed at the top of the screen and updated as you record your answers.

**IMPORTANT:** After you have entered your responses, you will later be able to return to any question(s) and change your response, provided the examination time has not run out.

### EXPERIMENTAL QUESTIONS

In addition to the number of questions per examination, a small number of "experimental" questions may be administered to candidates during the examinations. These questions will not be scored and the time taken to answer them will not count against examination time. The administration of such non-scored experimental questions is an essential step in developing future licensing examinations.

### EXAMINATION REVIEW

**In the event you fail the examination you will be given 30 minutes at the end of the examination to review the items you missed at no charge. The items will not be in any particular order.**

PSI, in cooperation with the Department, will be consistently evaluating the examinations being administered to ensure that the examinations accurately measure competency in the required knowledge areas. While taking the examination, examinees will have the opportunity to provide comments on any questions, by using the comments key on the keyboard. These comments will be analyzed by PSI examination development staff. PSI does not respond to individuals regarding these comments, all substantive comments are reviewed. This is the only review of examination materials available to candidates.

## SCORE REPORTING

In order to receive a passing score on each examination, you must correctly answer 70% of the questions available. In order to help you understand how this cut-score relates to your examination, we have listed the total number of questions found on each exam, and have listed the number of questions that equates to the 70% passing score. For example, on an 80 question test, candidates are required to get 70% of the questions correct which translates into 56 questions for that test.



Your score will be given to you immediately following completion of the examination. The following summary describes the score reporting process:

- **On screen** - your score will appear immediately on the computer screen. This will happen automatically at the end of the time allowed for the examination; if you are using review features, you will be able to obtain your score immediately when you indicate that you have finished and would like to see your results.
  - If you **pass**, you will immediately receive a successful notification.
  - If you **do not pass**, you will immediately receive an unsuccessful notification on the screen along with a diagnostic report indicating your strengths and weaknesses by examination type. Registration forms for submittal to PSI to retake the examination will be available at the examination site.
- **On paper** - an official score report will be printed at the examination site.

### DUPLICATE SCORE REPORTS

You may request a duplicate score report after your examination by emailing [scorereport@psionline.com](mailto:scorereport@psionline.com).

## TIPS FOR PREPARING FOR YOUR LICENSE EXAMINATION

The following suggestions will help you prepare for your examination.

- Planned preparation increases your likelihood of passing.
- Start with a current copy of this Candidate Information Bulletin and use the examination content outline as the basis of your study.
- Read study materials that cover all the topics in the content outline.
- Take notes on what you study. Putting information in writing helps you commit it to memory and it is also an excellent business practice. Underline or highlight key ideas that will help with a later review.
- Discuss new terms or concepts as frequently as you can with colleagues. This will test your understanding and reinforce ideas.
- Your studies will be most effective if you study frequently, for periods of about 45 to 60 minutes. Concentration tends to wander when you study for longer periods of time.

## EXAMINATION REFERENCE MATERIAL AND CONTENT OUTLINES

If a test question answer could differ because of conflicting information in test reference sources, a legal requirement such as a code, law or regulation overrides any other reference. If two legal requirements appear to conflict, the state-specific code, law or regulation overrides the national one. Information from sources on the test reference list override information from other sources or persons.

## BUSINESS AND LAW EXAMINATION

### Required for ALL Contractor/Dealer Tech Licenses

The Business and Law examination may include questions that appear not to directly relate to your licensing category. However, this examination and those questions are testing your general ability to research information.

# of Questions	Minimum Passing Score	Time Allowed
50	70%	2 Hours

### CONTENT OUTLINE

Subject Area	# of Items
Licensing	5
Estimating and Bidding	7
Lien Law	2
Financial Management	4
Tax Laws	5
Labor Laws	5
Project Management	5
Contracts	6
Business Organization	2
Risk Management	4
Environmental and Safety	5

### REFERENCE LIST

The reference material listed below was used to prepare the questions for this examination. The examination may also contain questions based on trade knowledge or general industry practices. **Except for Code books**, you can base your answers on later editions of references as they become available. For Code questions, the examinations will be based **only** on the edition of the Code book that is listed.

Candidates may use a silent, nonprinting, non-programmable calculator in the examination center.

This examination is OPEN BOOK.

*The following reference material is allowed in the examination center:*

- *Contractors Guide to Business, Law and Project Management, Connecticut, 5th Edition, National Association of State Contractors Licensing Agencies (NASCLA), 23309 N. 17th Drive, Phoenix, Arizona 85027, Telephone: (623) 587-9519, Fax: (623) 587-9625, [www.nascla.org](http://www.nascla.org).*

Candidates are responsible for bringing their own references to the examination center. Reference materials may be highlighted, underlined, **annotated**, and/or indexed prior to the examination session. However, references may not be written in during the examination session. Any candidate caught writing in the references during the examination will have the references confiscated and will be reported to the department. Furthermore, candidates are not permitted to bring in any additional papers (loose or attached) with their approved references. Any additional materials will be



removed from the references and confiscated. References may be tabbed/indexed with permanent tabs only. Temporary tabs, such as Post-It notes, are not allowed and must be removed from the reference before the exam will begin.

**NOTE: ALL CONTRACTORS AND DEALERS MUST PASS A BUSINESS AND LAW EXAMINATION AND A TRADE EXAMINATION.**

## TRADE AND JOURNEYPERSON EXAMINATIONS

In order to comply with the provisions of Public Act 99-253 and Public Act 00-128, and the regulations promulgated there under concerning Sheetmetal Work; "any person holding a license as defined within section 20-330 ( 5 ) of the Connecticut Statutes, may perform sheetmetal work' as it pertains to the type of license that such person holds." The examinations contained within this Heating, Piping, and Cooling Candidate Information Bulletin have the appropriate sheetmetal related questions pertaining to each examination type as defined in Section 20-330 ( 13 ) of the Connecticut General Statutes.

Many of these reference materials are available for purchase at [www.psonlinestore.com](http://www.psonlinestore.com) or by calling the PSI Online Store, toll-free, at (866) 589-3088.

Titles currently in stock are listed on the order form near the end of this candidate information bulletin.

### B-1 LIMITED GAS AND OIL BURNER CONTRACTOR

# of Questions	Minimum Passing Score	Time Allowed
50	70%	2 Hours

#### CONTENT OUTLINE

Subject Area	# of Items
Chimneys, Flues and Vents	2
Controls	4
Equipment	4
Fuel Gas Systems	10
General Knowledge	6
Oil Burners	7
Piping and Valves	4
Testing and Maintenance	3
Liquefied Petroleum Gas	5
Natural Gas	5

#### REFERENCE LIST

The reference material listed below was used to prepare the questions for this examination. The examination may also contain questions based on trade knowledge or general industry practices. **Except for Code books**, you can base your answers on later editions of references as they become available. For Code questions, the examinations will be based **only** on the edition of the Code book that is listed.

Candidates may use a silent, nonprinting, non-programmable calculator in the examination center.

This examination is OPEN BOOK.



**The following reference materials are allowed in the examination center:**

- *International Mechanical Code* or *International Mechanical Code Commentary*, 2015, 2018, and 2021 Editions, International Code Council Inc., 800-786-4452, <http://shop.iccsafe.org>
- *International Residential Code for One- and Two-Family Dwellings*, 2015, 2018, and 2021, International Code Council, (800) 786- 4452, [www.iccsafe.org](http://www.iccsafe.org)
- *International Fuel Gas Code*, 2015, 2018, and 2021, International Code Council Inc., 800-786-4452, <http://shop.iccsafe.org>
- *of Oil-Burning Equipment*. (2006 or 2011). National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
- *NFPA 54: National Fuel Gas Code or National Fuel Gas Code Handbook*, 2012, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org) - NOTE: You MUST use the longest length method for all gas pipe sizing questions.
- *NFPA 58: Liquefied Petroleum Gas Code*, 2014, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)

Candidates are responsible for bringing their own references to the examination center. Reference materials may be highlighted, underlined, **annotated**, and/or indexed prior to the examination session. However, references may not be written in during the examination session. Any candidate caught writing in the references during the examination will have the references confiscated and will be reported to the department. Furthermore, candidates are not permitted to bring in any additional papers (loose or attached) with their approved references. Any additional materials will be removed from the references and confiscated. References may be tabbed/indexed with permanent tabs only. Temporary tabs, such as Post-It notes, are not allowed and must be removed from the reference before the exam will begin.

**The following reference material is recommended for study, but is not allowed in the examination center:**

- *Residential Oil Burners*. 3<sup>rd</sup> Edition, 2007, Herb Weinberger, Delmar/Thomson Learning, P.O. Box 6904, Florence, KY 41022-6904.

### B-2 LIMITED GAS AND OIL BURNER JOURNEYPERSON

# of Questions	Minimum Passing Score	Time Allowed
40	70%	1 ½ Hours

#### CONTENT OUTLINE

Subject Area	# of Items
Chimneys, Flues and Vents	2
Controls	2
Equipment	2
Fuel Gas Systems	8
General Knowledge	4

Oil Burners	6
Piping and Valves	4
Testing and Maintenance	2
Liquefied Petroleum Gas	5
Natural Gas	5

## REFERENCE LIST

The reference material listed below was used to prepare the questions for this examination. The examination may also contain questions based on trade knowledge or general industry practices. **Except for Code books**, you can base your answers on later editions of references as they become available. For Code questions, the examinations will be based **only** on the edition of the Code book that is listed.

Candidates may use a silent, nonprinting, non-programmable calculator in the examination center. This examination is OPEN BOOK.

*The following reference materials are allowed in the examination center:*

- *International Mechanical Code or International Mechanical Code Commentary*, 2015, 2018, and 2021 Editions, International Code Council Inc., 800-786-4452, <http://shop.iccsafe.org>
- *International Residential Code for One- and Two-Family Dwellings*, 2015, International Code Council, (800) 786-4452, [www.iccsafe.org](http://www.iccsafe.org)
- *International Fuel Gas Code*, 2015, 2018, and 2021, International Code Council Inc., 800-786-4452, <http://shop.iccsafe.org>
- *of Oil-Burning Equipment*. (2006 or 2011). National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
- *NFPA 54: National Fuel Gas Code or National Fuel Gas Code Handbook*, 2012, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org) - NOTE: You MUST use the longest length method for all gas pipe sizing questions.
- *NFPA 58: Liquefied Petroleum Gas Code*, 2014, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)

Candidates are responsible for bringing their own references to the examination center. Reference materials may be highlighted, underlined, **annotated**, and/or indexed prior to the examination session. However, references may not be written in during the examination session. Any candidate caught writing in the references during the examination will have the references confiscated and will be reported to the department. Furthermore, candidates are not permitted to bring in any additional papers (loose or attached) with their approved references. Any additional materials will be removed from the references and confiscated. References may be tabbed/indexed with permanent tabs only. Temporary tabs, such as Post-It notes, are not allowed and must be removed from the reference before the exam will begin.

*The following reference material is recommended for study, but is not allowed in the examination center:*

- *Residential Oil Burners*. 3<sup>rd</sup> Edition, 2007, Herb Weinberger, Delmar/Thomson Learning, P.O. Box 6904, Florence, KY 41022-6904.

## B-3 LIMITED GAS AND OIL CONTRACTOR

# of Questions	Minimum Passing Score	Time Allowed
40	70%	1 ½ Hours

## CONTENT OUTLINE

Subject Area	# of Items
Chimneys, Flues and Vents	2
General Knowledge	6
Controls	4
Piping and Valves	4
Equipment	4
Testing and Maintenance	3
Fuel Gas Systems	10
Oil Burners	7

## REFERENCE LIST

The reference material listed below was used to prepare the questions for this examination. The examination may also contain questions based on trade knowledge or general industry practices. **Except for Code books**, you can base your answers on later editions of references as they become available. For Code questions, the examinations will be based **only** on the edition of the Code book that is listed. Candidates may use a silent, nonprinting, non-programmable calculator in the examination center.

This examination is OPEN BOOK.

*The following reference materials are allowed in the examination center:*

- *International Mechanical Code or International Mechanical Code Commentary*, 2015, 2018, and 2021 Editions, International Code Council Inc., 800-786-4452, <http://shop.iccsafe.org>
- *International Residential Code for One- and Two-Family Dwellings*, 2015, International Code Council, (800) 786-4452, [www.iccsafe.org](http://www.iccsafe.org)
- *NFPA 31: Standard for the Installation of Oil-Burning Equipment*. (2006 or 2011). National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
- *NFPA 54: National Fuel Gas Code or National Fuel Gas Code Handbook*, 2012, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org) - NOTE: You MUST use the longest length method for all gas pipe sizing questions.
- *NFPA 58: Liquefied Petroleum Gas Code*, 2014, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)



Candidates are responsible for bringing their own references to the examination center. Reference materials may be highlighted, underlined, **annotated**, and/or indexed prior to the examination session. However, references may not be written in during the examination session. Any candidate caught writing in the references during the examination will have the references confiscated and will be reported to the department. Furthermore, candidates are not permitted to bring in any additional papers (loose or attached) with their approved references. Any additional materials will be removed from the references and confiscated. References may be tabbed/indexed with permanent tabs only. Temporary tabs, such as Post-It notes, are not allowed and must be removed from the reference before the exam will begin.

*The following reference material is recommended for study, but is not allowed in the examination center:*

- *Residential Oil Burners*. 3<sup>rd</sup> Edition, 2007, Herb Weinberger, Delmar/Thomson Learning, P.O. Box 6904, Florence, KY 41022-6904.
- *Steam Plant Operation*, 10th edition, 2017, Lammers, Woodruff, Lammers, McGraw-Hill, (877) 833-5524, Fax (614) 759-3823, [www.mhprofessional.com](http://www.mhprofessional.com)

**B-4 LIMITED GAS AND OIL JOURNEYPERSON**

# of Questions	Minimum Passing Score	Time Allowed
30	70%	1 Hour

CONTENT OUTLINE

Subject Area	# of Items
Chimneys, Flues and Vents	2
General Knowledge	4
Controls	2
Piping and Valves	4
Equipment	2
Testing and Maintenance	2
Fuel Gas Systems	8
Oil Burners	6

REFERENCE LIST

The reference material listed below was used to prepare the questions for this examination. The examination may also contain questions based on trade knowledge or general industry practices. **Except for Code books**, you can base your answers on later editions of references as they become available. For Code questions, the examinations will be based **only** on the edition of the Code book that is listed. Candidates may use a silent, nonprinting, non-programmable calculator in the examination center.

This examination is OPEN BOOK.

*The following reference materials are allowed in the examination center:*

- *International Mechanical Code* or *International Mechanical Code Commentary*, 2015, 2018, and 2021



Editions, International Code Council Inc., 800-786-4452, <http://shop.iccsafe.org>

- *International Residential Code for One- and Two-Family Dwellings*, 2015, International Code Council, (800) 786-4452, [www.iccsafe.org](http://www.iccsafe.org)
- *NFPA 31: Standard for the Installation of Oil-Burning Equipment*. (2006 or 2011). National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
- *NFPA 54: National Fuel Gas Code or National Fuel Gas Code Handbook*, 2012, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org) - NOTE: You must use the longest length method for all gas pipe sizing questions.
- *NFPA 58: Liquefied Petroleum Gas Code*, 2014, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)

Candidates are responsible for bringing their own references to the examination center. Reference materials may be highlighted, underlined, **annotated**, and/or indexed prior to the examination session. However, references may not be written in during the examination session. Any candidate caught writing in the references during the examination will have the references confiscated and will be reported to the department. Furthermore, candidates are not permitted to bring in any additional papers (loose or attached) with their approved references. Any additional materials will be removed from the references and confiscated. References may be tabbed/indexed with permanent tabs only. Temporary tabs, such as Post-It notes, are not allowed and must be removed from the reference before the exam will begin.

*The following reference material is recommended for study, but is not allowed in the examination center:*

- *Residential Oil Burners*. 3<sup>rd</sup> Edition, 2007, Herb Weinberger, Delmar/Thomson Learning, P.O. Box 6904, Florence, KY 41022-6904.
- *Steam Plant Operation*, 10th edition, 2017, Lammers, Woodruff, Lammers, McGraw-Hill, (877) 833-5524, Fax (614) 759-3823, [www.mhprofessional.com](http://www.mhprofessional.com)

**BM-1 BOILER MAKER CONTRACTOR (POWER INDUSTRY LICENSE)**

# of Questions	% Required to Pass	Time Allowed
40	70	90 minutes

CONTENT OUTLINE

Subject Area	# of Items
Welding	10
Pipe Fabrication	4
Boiler Design	5
Quality Control	3
Rigging	6
Pressure and Non-Pressure components	8
Safety	4

REFERENCE LIST

The reference material listed below was used to prepare the questions for this examination. The examination may also contain questions based on trade knowledge or general industry practices. **Except for Code books**, you can base your answers on later editions of references as they become available. For Code questions, the examinations will be based **only** on the edition of the Code book that is listed.

Candidates may use a silent, nonprinting, non-programmable calculator in the examination center.

This examination is OPEN BOOK.

**The following reference materials are allowed in the examination center:**

- *Modern Welding*, 2013, 11<sup>th</sup> Edition, Althouse/Turnquist/Bowditch/Bowditch/Bowditch, The Goodheart-Willcox Company, Inc., 18604 West Creek Dr., Tinley Park, IL 60477-6243, (800) 323-0440, <http://www.g-w.com/>
- *Code of Federal Regulations - 29 CFR Part 1926 (OSHA)*, with latest available amendments, U.S. Government Printing Office, (866) 512-1800 or [https://www.osha.gov/pls/oshaweb/owastand.display\\_standard\\_group?p\\_toc\\_level=1&p\\_part\\_number=1926](https://www.osha.gov/pls/oshaweb/owastand.display_standard_group?p_toc_level=1&p_part_number=1926)  
**OR**  
*Code of Federal Regulations - 29 CFR Part 1926 Selections by PSI*, with latest available amendments, (866) 589-3088, [www.psiolinestore.com](http://www.psiolinestore.com) (See order form at the end of the Candidate Information Bulletin.)
- *Pipe Welding Procedures*, Rampaul, H. (2<sup>nd</sup> Ed., 2002). Industrial Press, Inc., 200 Madison Avenue, New York, NY 10016, (888) 528-7852, [www.industrialpress.com](http://www.industrialpress.com).
- *Welding Technology Fundamentals*, 3rd Edition, Kevin E. Bowditch, William A. Bowditch.
- *Welding Print Reading*, 5th Edition, W. Richard Polanin, John R. Walker.
- *Oxyfuel Gas Welding*, 6th Edition, Kevin E. Bowditch, Mark A. Bowditch.
- *Arc Welding*, 7th Edition, W. Richard Polanin, John R. Walker.

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**The following reference material is recommended for study, but is not allowed in the examination center:**

- *Boilermaking Level Three*, 2001, NCCER Contren Learning Series, (800) 922-0579, [www.crafttraining.com](http://www.crafttraining.com), or Prentice-Hall PTR, (800) 382-3419, [www.phdirect.com](http://www.phdirect.com)
- *Boilermaking Level Four*, 2002, NCCER Contren Learning Series, (800) 922-0579, [www.crafttraining.com](http://www.crafttraining.com), or Prentice-Hall PTR, (800) 382-3419, [www.phdirect.com](http://www.phdirect.com).

- *Steam Plant Operation*, 10th edition, 2017, Lammers, Woodruff, Lammers, McGraw-Hill, (877) 833-5524, Fax (614) 759-3823, [www.mhprofessional.com](http://www.mhprofessional.com)

**BM-2 BOILER MAKER JOURNEYPERSON  
(POWER INDUSTRY LICENSE)**

# of Questions	% Required to Pass	Time Allowed
30	70	60 minutes

**CONTENT OUTLINE**

Subject Area	# of Items
Welding	8
Pipe Fabrication	3
Boiler Design	3
Quality Control	2
Rigging	5
Pressure and Non-Pressure components	6
Safety	3

**REFERENCE LIST**

The reference material listed below was used to prepare the questions for this examination. The examination may also contain questions based on trade knowledge or general industry practices. **Except for Code books**, you can base your answers on later editions of references as they become available. For Code questions, the examinations will be based **only** on the edition of the Code book that is listed.

Candidates may use a silent, nonprinting, non-programmable calculator in the examination center.

This examination is OPEN BOOK.

**The following reference materials are allowed in the examination center:**

- *Modern Welding*, 2013, 11<sup>th</sup> Edition, Althouse/Turnquist/Bowditch/Bowditch/Bowditch, The Goodheart-Willcox Company, Inc., 18604 West Creek Dr., Tinley Park, IL 60477-6243, (800) 323-0440, <http://www.g-w.com/>
- *Code of Federal Regulations - 29 CFR Part 1926 (OSHA)*, with latest available amendments, U.S. Government Printing Office, (866) 512-1800 or [https://www.osha.gov/pls/oshaweb/owastand.display\\_standard\\_group?p\\_toc\\_level=1&p\\_part\\_number=1926](https://www.osha.gov/pls/oshaweb/owastand.display_standard_group?p_toc_level=1&p_part_number=1926)  
**OR**  
*Code of Federal Regulations - 29 CFR Part 1926 Selections by PSI*, with latest available amendments, (866) 589-3088, [www.psiolinestore.com](http://www.psiolinestore.com) (See order form at the end of the Candidate Information Bulletin.)
- *Pipe Welding Procedures*, Rampaul, H. (2<sup>nd</sup> Ed., 2002). Industrial Press, Inc., 200 Madison Avenue, New York, NY 10016, (888) 528-7852, [www.industrialpress.com](http://www.industrialpress.com).
- *Welding Technology Fundamentals*, 3rd Edition, Kevin E. Bowditch, William A. Bowditch.
- *Welding Print Reading*, 5th Edition, W. Richard Polanin, John R. Walker.
- *Oxyfuel Gas Welding*, 6th Edition, Kevin E. Bowditch, Mark A. Bowditch.



- *Arc Welding*, 7th Edition, W. Richard Polanin, John R. Walker.

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- *Boilermaking Level Three*, 2001, NCCER Contren Learning Series, (800) 922-0579, [www.crafttraining.com](http://www.crafttraining.com), or Prentice-Hall PTR, (800) 382-3419, [www.phdirect.com](http://www.phdirect.com).
- *Boilermaking Level Four*, 2002, NCCER Contren Learning Series, (800) 922-0579, [www.crafttraining.com](http://www.crafttraining.com), or Prentice-Hall PTR, (800) 382-3419, [www.phdirect.com](http://www.phdirect.com).
- *Steam Plant Operation*, 10th edition, 2017, Lammers, Woodruff, Lammers, McGraw-Hill, (877) 833-5524, Fax (614) 759-3823, [www.mhprofessional.com](http://www.mhprofessional.com)

**D-1 LIMITED WARM AIR, AIR CONDITIONING AND REFRIGERATION SYSTEM CONTRACTOR**

# of Questions	Minimum Passing Score	Time Allowed
70	70%	3 Hours

**CONTENT OUTLINE**

Subject Area	# of Items
Insulation	1
Hangers and Supports	2
Sound, Vibration and Seismic Control	1
Heating and Cooling Principles	5
Refrigerants and Refrigeration	8
Testing, Adjusting and Balancing	2
Controls	5
Machine Room	1
A/C and Heat Pump Equipment	5
Furnaces and Heaters	4
Chimneys, Flues and Vents	2
Combustion Air	2
Fuel Gas Systems	10
Ducts	6
Chillers	3
Ventilation and Exhaust	3
Safety	4
Load Calculations	6

**REFERENCE LIST**

The reference material listed below was used to prepare the questions for this examination. The examination may also contain questions based on trade knowledge or general industry practices. **Except for Code books**, you can base your answers on later editions of references as they become available. For Code questions, the examinations will be based **only** on the edition of the Code book that is listed.

Candidates may use a silent, nonprinting, non-programmable calculator in the examination center.

This examination is OPEN BOOK.

*The following reference materials **are** allowed in the examination center:*

- *International Mechanical Code* or *International Mechanical Code Commentary*, 2015, 2018, and 2021 Editions, International Code Council Inc., 800-786-4452, <http://shop.iccsafe.org>
- *Manual J - Residential Load Calcs*, reprinted 2006, Eighth Full Edition, Air Conditioning Contractors of America (ACCA), 2800 Shirlington Road, Suite 300, Arlington, VA 22206, (703) 575-4477, [www.acca.org](http://www.acca.org)
- *Manual N - Load Calculation for Small Commercial Buildings*, Fifth Edition, 2008, Air Conditioning Contractors of America (ACCA), 2800 Shirlington Road, Suite 300, Arlington, VA 22206, (703) 575-4477, [www.acca.org](http://www.acca.org)
- *NFPA 54: National Fuel Gas Code or National Fuel Gas Code Handbook*, 2012, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org) - NOTE: You MUST use the longest length method for all gas pipe sizing questions.
- *Code of Federal Regulations - 29 CFR Part 1926 (OSHA)*, with latest available amendments, U.S. Government Printing Office, (866) 512-1800 or [https://www.osha.gov/pls/oshaweb/owastand.display\\_standard\\_group?p\\_toc\\_level=1&p\\_part\\_number=1926](https://www.osha.gov/pls/oshaweb/owastand.display_standard_group?p_toc_level=1&p_part_number=1926)  
**OR**  
*Code of Federal Regulations - 29 CFR Part 1926 Selections by PSI*, with latest available amendments, (866) 589-3088, [www.psionlinestore.com](http://www.psionlinestore.com) (See order form at the end of the Candidate Information Bulletin.)
- *Modern Refrigeration and Air Conditioning*, 19<sup>th</sup>, 20<sup>th</sup> or 21<sup>st</sup> Edition, Althouse, Turnquist, & Bracciano, Goodheart-Willcox Publisher, 800-323-0440, [www.g-w.com/](http://www.g-w.com/)
- *ACCA Ductulator, Air Conditioning Contractors of America*, 2800 Shirlington Road, Suite 300, Arlington, VA 22206, (703) 575-4477, [www.acca.org](http://www.acca.org)
- *HVAC Duct Construction Standards*, 2005, 3rd Edition, SMACNA, (703) 803-2980, [www.smacna.org](http://www.smacna.org)
- *NFPA 58: Liquefied Petroleum Gas Code*, 2014, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)

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removed from the references and confiscated. References may be tabbed/indexed with permanent tabs only. Temporary tabs, such as Post-It notes, are not allowed and must be removed from the reference before the exam will begin.

## D-2 LIMITED WARM AIR, AIR CONDITIONING AND REFRIGERATION SYSTEM JOURNEYPERSON

# of Questions	Minimum Passing Score	Time Allowed
60	70%	2 Hours

### CONTENT OUTLINE

Subject Area	# of Items
Insulation	1
Hangers and Supports	2
Sound, Vibration and Seismic Control	1
Heating and Cooling Principles	5
Refrigerants and Refrigeration	8
Testing, Adjusting and Balancing	1
Controls	3
Machine Room	1
A/C and Heat Pump Equipment	5
Furnaces and Heaters	4
Chimneys, Flues and Vents	2
Combustion Air	2
Fuel Gas Systems	10
Ducts	6
Chillers	2
Ventilation and Exhaust	3
Safety	4

### REFERENCE LIST

The reference material listed below was used to prepare the questions for this examination. The examination may also contain questions based on trade knowledge or general industry practices. **Except for Code books**, you can base your answers on later editions of references as they become available. For Code questions, the examinations will be based **only** on the edition of the Code book that is listed.

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This examination is OPEN BOOK.

*The following reference materials are allowed in the examination center:*

- *International Mechanical Code or International Mechanical Code Commentary*, 2015, 2018, and 2021 Editions, International Code Council Inc., 800-786-4452, <http://shop.iccsafe.org>
- *NFPA 54: National Fuel Gas Code or National Fuel Gas Code Handbook*, 2012, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org) - NOTE: You MUST use the longest length method for all gas pipe sizing questions.) [https://www.osha.gov/pls/oshaweb/owastand.display\\_st andard\\_group?p\\_toc\\_level=1&p\\_part\\_number=1926](https://www.osha.gov/pls/oshaweb/owastand.display_st andard_group?p_toc_level=1&p_part_number=1926)

OR

*Code of Federal Regulations - 29 CFR Part 1926 Selections by PSI*, with latest available amendments, (866) 589-3088, [www.psionlinestore.com](http://www.psionlinestore.com) (See order form at the end of the Candidate Information Bulletin.)

- *Modern Refrigeration and Air Conditioning*, 19<sup>th</sup>, 20<sup>th</sup> or 21<sup>st</sup> Edition, Althouse, Turnquist, & Bracciano, Goodheart-Willcox Publisher, 800-323-0440, [www.g-w.com/](http://www.g-w.com/)
- *ACCA Ductulator, Air Conditioning Contractors of America*, 2800 Shirlington Road, Suite 300, Arlington, VA 22206, (703) 575-4477, [www.acca.org](http://www.acca.org)
- *HVAC Duct Construction Standards*, 2005, 3rd Edition, SMACNA, (703) 803-2980, [www.smacna.org](http://www.smacna.org)
- *NFPA 58: Liquefied Petroleum Gas Code*, 2014, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)

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## D-3 LIMITED HEATING-COOLING CONTRACTOR

# of Questions	Minimum Passing Score	Time Allowed
50	70%	2 Hours

### CONTENT OUTLINE

Subject Area	# of Items
Refrigeration and Refrigerants	15
Piping and Tubing	6
Components	10
Controls, Valves and Wiring	9
Tests, Inspection and Maintenance	6
Safety	4

### REFERENCE LIST

The reference material listed below was used to prepare the questions for this examination. The examination may also contain questions based on trade knowledge or general industry practices. **Except for Code books**, you can base your answers on later editions of references as they become available. For Code questions, the examinations will be based **only** on the edition of the Code book that is listed.

Candidates may use a silent, nonprinting, non-programmable calculator in the examination center.

This examination is OPEN BOOK.





**The following reference materials are allowed in the examination center:**

- *International Mechanical Code* or *International Mechanical Code Commentary*, 2015, 2018, and 2021 Editions, International Code Council Inc., 800-786-4452, <http://shop.iccsafe.org>
- *Code of Federal Regulations - 29 CFR Part 1926 (OSHA)*, with latest available amendments, U.S. Government Printing Office, (866) 512-1800 or [https://www.osha.gov/pls/oshaweb/owastand.display\\_stand\\_group?p\\_toc\\_level=1&p\\_part\\_number=1926](https://www.osha.gov/pls/oshaweb/owastand.display_stand_group?p_toc_level=1&p_part_number=1926)  
OR  
*Code of Federal Regulations - 29 CFR Part 1926 Selections by PSI*, with latest available amendments, (866) 589-3088, [www.psionlinestore.com](http://www.psionlinestore.com) (See order form at the end of the Candidate Information Bulletin.)
- *Modern Refrigeration and Air Conditioning*, 19<sup>th</sup>, 20<sup>th</sup> or 21<sup>st</sup> Edition, Althouse, Turnquist, & Bracciano, Goodheart-Willcox Publisher, 800-323-0440, [www.g-w.com/](http://www.g-w.com/)

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**D-4 LIMITED HEATING-COOLING JOURNEYPEPERSON**

# of Questions	Minimum Passing Score	Time Allowed
40	70%	1 ½ Hours

**CONTENT OUTLINE**

Subject Area	# of Items
Refrigeration and Refrigerants	12
Piping and Tubing	5
Components	7
Controls, Valves and Wiring	7
Tests, Inspection and Maintenance	5
Safety	4

**REFERENCE LIST**

The reference material listed below was used to prepare the questions for this examination. The examination may also contain questions based on trade knowledge or general industry practices. **Except for Code books**, you can base your answers on later editions of references as they become

available. For Code questions, the examinations will be based only on the edition of the Code book that is listed.

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**The following reference materials are allowed in the examination center:**

- *International Mechanical Code* or *International Mechanical Code Commentary*, 2015, 2018, and 2021 Editions, International Code Council Inc., 800-786-4452, <http://shop.iccsafe.org>
- *Code of Federal Regulations - 29 CFR Part 1926 (OSHA)*, with latest available amendments, U.S. Government Printing Office, (866) 512-1800 or [https://www.osha.gov/pls/oshaweb/owastand.display\\_stand\\_group?p\\_toc\\_level=1&p\\_part\\_number=1926](https://www.osha.gov/pls/oshaweb/owastand.display_stand_group?p_toc_level=1&p_part_number=1926)  
OR  
*Code of Federal Regulations - 29 CFR Part 1926 Selections by PSI*, with latest available amendments, (866) 589-3088, [www.psionlinestore.com](http://www.psionlinestore.com) (See order form at the end of the Candidate Information Bulletin.)
- *Modern Refrigeration and Air Conditioning*, 19<sup>th</sup> or 20<sup>th</sup> Edition, Althouse, Turnquist, & Bracciano, Goodheart-Willcox Publisher, 800-323-0440, [www.g-w.com/](http://www.g-w.com/)

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**S-1 UNLIMITED HEATING, PIPING, AND COOLING CONTRACTOR**

# of Questions	% Required to Pass	Time Allowed
80	70	3 hours

**CONTENT OUTLINE**

Subject Area	# of Items
Insulation	1
Hangers and Supports	2
Sound, Vibration and Seismic Control	1
Heating and Cooling Principles	3
Refrigerants and Refrigeration	5
Testing, Adjusting and Balancing	3
Controls	4
Machine Room	1
A/C and Heat Pump Equipment	3





Furnaces and Heaters	4
Hydronics	6
Chimneys, Flues and Vents	5
Combustion Air	2
Fuel Gas Systems	10
Ducts	6
Chillers	2
Ventilation and Exhaust	2
Safety	4
Oil Burners	6
Load Calculations	7
Boilers	3

## REFERENCE LIST

The reference material listed below was used to prepare the questions for this examination. The examination may also contain questions based on trade knowledge or general industry practices. **Except for Code books**, you can base your answers on later editions of references as they become available. For Code questions, the examinations will be based **only** on the edition of the Code book that is listed.

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**The following reference materials are allowed in the examination center:**

- *Manual N - Load Calculation for Small Commercial Buildings*, Fifth Edition, 2008, Air Conditioning Contractors of America (ACCA), 2800 Shirlington Road, Suite 300, Arlington, VA 22206, (703) 575-4477, [www.acca.org](http://www.acca.org)
- *International Mechanical Code* or *International Mechanical Code Commentary*, 2015, 2018, and 2021 Editions, International Code Council Inc., 800-786-4452, <http://shop.iccsafe.org>
- *NFPA 31: Standard for the Installation of Oil-Burning Equipment*. (2006 or 2011). National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
- *NFPA 54: National Fuel Gas Code or National Fuel Gas Code Handbook*, 2012, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org) - NOTE: You MUST use the longest length method for all gas pipe sizing questions.
- *Code of Federal Regulations - 29 CFR Part 1926 (OSHA)*, with latest available amendments, U.S. Government Printing Office, (866) 512-1800 or [https://www.osha.gov/pls/oshaweb/owastand.display\\_standard\\_group?p\\_toc\\_level=1&p\\_part\\_number=1926](https://www.osha.gov/pls/oshaweb/owastand.display_standard_group?p_toc_level=1&p_part_number=1926)  
OR  
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- *Modern Refrigeration and Air Conditioning*, 19<sup>th</sup>, 20<sup>th</sup> or 21<sup>st</sup> Edition, Althouse, Turnquist, & Bracciano, Goodheart-Willcox Publisher, 800-323-0440, [www.g-w.com/](http://www.g-w.com/)
- *ACCA Ductulator, Air Conditioning Contractors of America*, 2800 Shirlington Road, Suite 300, Arlington, VA 22206, (703) 575-4477, [www.acca.org](http://www.acca.org)
- *HVAC Duct Construction Standards*, 2005, 3rd Edition, SMACNA, (703) 803-2980, [www.smacna.org](http://www.smacna.org)

- *NFPA 58: Liquefied Petroleum Gas Code*, 2014, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
- *NFPA 56: Standard for Fire and Explosion Prevention During Cleaning and Purging of Flammable Gas Piping Systems Current Edition*. [www.nfpa.org](http://www.nfpa.org)

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**The following reference material is recommended for study, but is not allowed in the examination center:**

- *Modern Hydronic Heating for Residential and Light Commercial Buildings*, John Siegenthaler, 2004, 2nd edition, Cengage Learning, 800.354.9706, [www.cengage.com](http://www.cengage.com)
- *Residential Oil Burners*, 3<sup>rd</sup> Edition, 2007, Herb Weinberger, Delmar/Thomson Learning, P.O. Box 6904, Florence, KY 41022-6904, <http://www.delmar.com/delmar.html>.
- *Steam Plant Operation*, 10th edition, 2017, Lammers, Woodruff, Lammers, McGraw-Hill, (877) 833-5524, Fax (614) 759-3823, [www.mhprofessional.com](http://www.mhprofessional.com)

## S-2 UNLIMITED HEATING, PIPING, AND COOLING JOURNEYPERSON

# of Questions	% Required to Pass	Time Allowed
70	70%	3 hours

### CONTENT OUTLINE

Subject Area	# of Items
Insulation	1
Hangers and Supports	2
Sound, Vibration and Seismic Control	1
Heating and Cooling Principles	4
Refrigerants and Refrigeration	5
Testing, Adjusting and Balancing	1
Controls	4
Machine Room	1
A/C and Heat Pump Equipment	3
Furnaces and Heaters	4
Hydronics	6
Chimneys, Flues and Vents	3
Combustion Air	2
Fuel Gas Systems	10
Ducts	6



Chillers	2
Ventilation and Exhaust	2
Safety	4
Oil Burners	6
Boilers	3

**REFERENCE LIST**

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This examination is OPEN BOOK.

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- *International Mechanical Code or International Mechanical Code Commentary*, 2015, 2018, and 2021 Editions, International Code Council Inc., 800-786-4452, <http://shop.iccsafe.org>
- *NFPA 54: National Fuel Gas Code or National Fuel Gas Code Handbook*, 2012, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org) - NOTE: You MUST use the longest length method for all gas pipe sizing questions.
- *NFPA 31: Standard for the Installation of Oil-Burning Equipment*. (2006 or 2011). National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
- *Code of Federal Regulations - 29 CFR Part 1926 (OSHA)*, with latest available amendments, U.S. Government Printing Office, (866) 512-1800 or [https://www.osha.gov/pls/oshaweb/owastand.display\\_standard\\_group?p\\_toc\\_level=1&p\\_part\\_number=1926](https://www.osha.gov/pls/oshaweb/owastand.display_standard_group?p_toc_level=1&p_part_number=1926)  
**OR**  
*Code of Federal Regulations - 29 CFR Part 1926 Selections by PSI*, with latest available amendments, (866) 589-3088, [www.psionlinestore.com](http://www.psionlinestore.com) (See order form at the end of the Candidate Information Bulletin.)
- *Modern Refrigeration and Air Conditioning*, 19<sup>th</sup>, 20<sup>th</sup> or 21<sup>st</sup> Edition, Althouse, Turnquist, & Bracciano, Goodheart-Willcox Publisher, 800-323-0440, [www.g-w.com/](http://www.g-w.com/)
- *ACCA Ductulator, Air Conditioning Contractors of America*, 2800 Shirlington Road, Suite 300, Arlington, VA 22206, (703) 575-4477, [www.acca.org](http://www.acca.org)
- *HVAC Duct Construction Standards*, 2005, 3rd Edition, SMACNA, (703) 803-2980, [www.smacna.org](http://www.smacna.org)
- *NFPA 58: Liquefied Petroleum Gas Code*, 2014, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
- *NFPA 56: Standard for Fire and Explosion Prevention During Cleaning and Purging of Flammable Gas Piping Systems Current Edition*. [www.nfpa.org](http://www.nfpa.org)

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*The following reference material is recommended for study, but is not allowed in the examination center:*

- *Modern Hydronic Heating for Residential and Light Commercial Buildings*, John Siegenthaler, 2004, 2nd edition, Cengage Learning, 800.354.9706, [www.cengage.com](http://www.cengage.com)
- *Residential Oil Burners*, 3<sup>rd</sup> Edition, 2007, Herb Weinberger, Delmar/Thomson Learning, P.O. Box 6904, Florence, KY 41022-6904, <http://www.delmar.com/delmar.html>
- *Steam Plant Operation*, 10th edition, 2017, Lammers, Woodruff, Lammers, McGraw-Hill, (877) 833-5524, Fax (614) 759-3823, [www.mhprofessional.com](http://www.mhprofessional.com)

**S-3 LIMITED HEATING, COOLING AND PIPING CONTRACTOR**

# of Questions	% Required to Pass	Time Allowed
60	70%	2 hours

**CONTENT OUTLINE**

Subject Area	# of Items
Chimneys, Flues and Vents	2
Insulation	1
General Knowledge	5
Controls	3
Hydronics	5
Fuel Gas Systems	11
Oil Burners	7
Piping	6
Boilers	5
Combustion Air	2
Storage Tanks	3
Ducts	3
Heating and Chilled Water Equipment	3
OSHA Safety	4

**REFERENCE LIST**

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- *NFPA 54: National Fuel Gas Code or National Fuel Gas Code Handbook*, 2012, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org) - NOTE: You MUST use the longest length method for all gas pipe sizing questions.
- *NFPA 31: Standard for the Installation of Oil-Burning Equipment*. (2006 or 2011). National Fire Protection Association, 1 Batterymarch, Quincy, MA 02269-9101, [www.nfpa.org](http://www.nfpa.org).
- *Modern Refrigeration and Air Conditioning*, 19<sup>th</sup>, 20<sup>th</sup> or 21<sup>st</sup> Edition, Althouse, Turnquist, & Bracciano, Goodheart-Willcox Publisher, 800-323-0440, [www.g-w.com/](http://www.g-w.com/)
- *Code of Federal Regulations - 29 CFR Part 1926 (OSHA)*, with latest available amendments, U.S. Government Printing Office, (866) 512-1800 or [https://www.osha.gov/pls/oshaweb/owastand.display\\_standard\\_group?p\\_toc\\_level=1&p\\_part\\_number=1926](https://www.osha.gov/pls/oshaweb/owastand.display_standard_group?p_toc_level=1&p_part_number=1926)  
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- *Modern Hydronic Heating for Residential and Light Commercial Buildings*, John Siegenthaler, 2004, 2nd edition, Cengage Learning, 800.354.9706,

[www.cengage.com](http://www.cengage.com)

- *Steam Plant Operation*, 10th edition, 2017, Lammers, Woodruff, Lammers, McGraw-Hill, (877) 833-5524, Fax (614) 759-3823, [www.mhprofessional.com](http://www.mhprofessional.com)

**S-4 LIMITED HEATING, COOLING, AND PIPING  
(JOURNEYPERSON)**

# of Questions	% Required to Pass	Time Allowed
50	70	2 hours

CONTENT OUTLINE

Subject Area	# of Items
Chimneys, Flues and Vents	2
Insulation	1
General Knowledge	2
Controls	3
Hydronics	7
Fuel Gas Systems	8
Oil Burners	6
Piping	5
Boilers	3
Combustion Air	2
Storage Tanks	2
Ducts	3
Heating and Chilled Water Equipment	3
OSHA Safety	3

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- *Modern Refrigeration and Air Conditioning*, 19<sup>th</sup>, 20<sup>th</sup> or 21<sup>st</sup> Edition, Althouse, Turnquist, & Bracciano,



Goodheart-Willcox Publisher, 800-323-0440, [www.g-w.com/](http://www.g-w.com/)

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- *Residential Oil Burners*, Third Edition, 2007, Herb Weinberger, Delmar/Thomson Learning, P.O. Box 6904, Florence, KY 41022-6904, (800) 347-7707, <http://www.delmar.com/delmar.html>.
- *Steam Plant Operation*, 10th edition, 2017, Lammers, Woodruff, Lammers, McGraw-Hill, (877) 833-5524, Fax (614) 759-3823, [www.mhprofessional.com](http://www.mhprofessional.com)

### S-5 LIMITED HEATING, HOT WATER, AND STEAM CONTRACTOR

# of Questions	Minimum Passing Score	Time Allowed
40	70%	1 ½ Hours

#### CONTENT OUTLINE

Subject Area	# of Items
Insulation	1
General Knowledge	4
Controls	5
Equipment	8



Piping	17
Maintenance and Testing	5

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- *Carrier System Design Manual* (Part 3, Piping Design), Carrier Air Conditioning Company, P.O. Box 4808 Syracuse, NY, (800) 227-7437.
- *Pipefitter's Handbook*. Lindsey, F.R., (3<sup>rd</sup> Ed., 1967). Industrial Press, Inc., 200 Madison Avenue, New York, NY 10016, (888) 528-7852.

### S-6 LIMITED HEATING, HOT WATER, AND STEAM (JOURNEYPERSON)

# of Questions	Minimum Passing Score	Time Allowed
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40	70%	1 ½ Hours
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### CONTENT OUTLINE

Subject Area	# of Items
Insulation	1
General Knowledge	4
Controls	5
Equipment	8
Piping	17
Maintenance and Testing	5

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- *Carrier System Design Manual* (Part 3, Piping Design), Carrier Air Conditioning Company, P.O. Box 4808 Syracuse, NY, (800) 227-7437.
- *Pipefitter's Handbook*. Lindsey, F.R.. (3<sup>rd</sup> Ed., 1967). Industrial Press, Inc., 200 Madison Avenue, New York, NY 10016, (888) 5288-7852, [www.industrialpress.com](http://www.industrialpress.com)

## S-7 LIMITED CONTRACTOR

# of Questions	Minimum Passing Score	Time Allowed
60	70%	2 Hours

### CONTENT OUTLINE

Subject Area	# of Items
Chimneys, Flues and Vents	5
Insulation	2
General Knowledge	6
Controls	4
Hydronics	10
Fuel Gas Systems	10
Oil Burners	6
Piping	6
Boilers	2
Maintenance and Testing	4
Combustion Air	2

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- *International Residential Code for One- and Two-Family Dwellings*, 2015, 2018, and 2021, International Code Council, (800) 786- 4452, [www.iccsafe.org](http://www.iccsafe.org)
- *NFPA 31: Standard for the Installation of Oil-Burning Equipment*. (2006 or 2011). National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
- *NFPA 54: National Fuel Gas Code or National Fuel Gas Code Handbook*, 2012, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org) - NOTE: You MUST use the longest length method for all gas pipe sizing questions.
- *Modern Refrigeration and Air Conditioning*, 19<sup>th</sup>, 20<sup>th</sup> or 21<sup>st</sup> Edition, Althouse, Turnquist, & Bracciano, Goodheart-Willcox Publisher, 800-323-0440, [www.g-w.com/](http://www.g-w.com/)
- *NFPA 58: Liquefied Petroleum Gas Code*, 2014, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)





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- *Pipefitter's Handbook*. Lindsey, F.R.. (3<sup>rd</sup> Ed., 1967). Industrial Press, Inc., 200 Madison Avenue, New York, NY 10016, (888) 5288-7852
- *Modern Hydronic Heating for Residential and Light Commercial Buildings*, John Siegenthaler, 2004, 2nd edition, Cengage Learning, 800.354.9706, [www.cengage.com](http://www.cengage.com)

## S-8 LIMITED JOURNEYPERSON

# of Questions	Minimum Passing Score	Time Allowed
50	70%	2 Hours

### CONTENT OUTLINE

Subject Area	# of Items
Chimneys, Flues and Vents	4
Insulation	2
General Knowledge	6
Controls	4
Hydronics	7
Fuel Gas Systems	7
Oil Burners	4
Piping	6
Boilers	2
Maintenance and Testing	4
Combustion Air	2
Storage Tanks	2

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- *International Residential Code for One- and Two-Family Dwellings*, 2015, 2018, and 2021, International Code Council, (800) 786- 4452, [www.iccsafe.org](http://www.iccsafe.org)
- *NFPA 31: Standard for the Installation of Oil-Burning Equipment*. (2006 or 2011). National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
- *NFPA 54: National Fuel Gas Code or National Fuel Gas Code Handbook*, 2012, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org) - NOTE: You MUST use the longest length method for all gas pipe sizing questions.
- *Modern Refrigeration and Air Conditioning*, 19<sup>th</sup>, 20<sup>th</sup> or 21<sup>st</sup> Edition, Althouse, Turnquist, & Bracciano, Goodheart-Willcox Publisher, 18604 West Creek Drive, Tinley Park, IL 60477-6243, 800-323-0440, [www.g-w.com](http://www.g-w.com)
- *NFPA 58: Liquefied Petroleum Gas Code*, 2014, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)

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- *Pipefitter's Handbook*, Lindsey, F.R. (3<sup>rd</sup> Ed., 1967). Industrial Press, Inc., 200 Madison Avenue, New York, NY 10016, (888) 5288-7852.
- *Modern Hydronic Heating for Residential and Light Commercial Buildings*, John Siegenthaler, 2004, 2nd edition, Cengage Learning, 800.354.9706, [www.cengage.com](http://www.cengage.com)



## S-9 LIMITED HEATING COOLING CONTRACTOR

# of Questions	% Required to Pass	Time Allowed
80	70%	3 hours

### CONTENT OUTLINE

Subject Area	# of Items
Insulation	2
Hangers and Supports	3
Sound, Vibration and Seismic Control	1
Heating and Cooling Principles	3
Refrigerants and Refrigeration	8
Testing, Adjusting, and Balancing	3
Controls	5
A/C and Heat Pump Equipment	5
Furnaces and Heaters	5
Hydronics	2
Chimneys, Flues, and Vents	5
Combustion Air	2
Fuel Gas Systems	10
Ducts	6
Ventilation and Exhaust	3
Safety	4
Oil Burners	6
Load Calculations	7

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**The following reference materials are allowed in the examination center:**

- *Manual J - Residential Load Calcs*, reprinted 2006, Eighth Full Edition, Air Conditioning Contractors of America (ACCA), 2800 Shirlington Road, Suite 300. Arlington, VA 22206, (703) 575-4477, [www.acca.org](http://www.acca.org).
- *International Residential Code for One- and Two-Family Dwellings*, 2015, 2018, and 2021 International Code Council, (800) 786- 4452, [www.iccsafe.org](http://www.iccsafe.org)
- *International Mechanical Code or International Mechanical Code Commentary*, 2015, 2018, and 2021 Editions, International Code Council Inc., 800-786-4452, <http://shop.iccsafe.org>
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- *NFPA 54: National Fuel Gas Code or National Fuel Gas Code Handbook*, 2012 or 2015, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169,

(800) 344-3555, [www.nfpa.org](http://www.nfpa.org) - NOTE: You MUST use the longest length method for all gas pipe sizing questions.

- *ACCA Ductulator*, The Air Conditioning Contractors of America, 2800 Shirlington Road, Suite 300, Arlington, VA 22206, (703) 575-4477, [www.acca.org](http://www.acca.org).
- *Code of Federal Regulations - 29 CFR Part 1926 (OSHA)*, with latest available amendments, U.S. Government Printing Office, (866) 512-1800 or [https://www.osha.gov/pls/oshaweb/owastand.display\\_standard\\_group?p\\_toc\\_level=1&p\\_part\\_number=1926](https://www.osha.gov/pls/oshaweb/owastand.display_standard_group?p_toc_level=1&p_part_number=1926)  
**OR**  
*Code of Federal Regulations - 29 CFR Part 1926 Selections by PSI*, with latest available amendments, (866) 589-3088, [www.psionlinestore.com](http://www.psionlinestore.com) (See order form at the end of the Candidate Information Bulletin.)
- *Modern Refrigeration and Air Conditioning*, 19<sup>th</sup>, 20<sup>th</sup> or 21<sup>st</sup> Edition, Althouse, Turnquist, & Bracciano, Goodheart-Willcox Publisher, 800-323-0440, [www.g-w.com/](http://www.g-w.com/)
- *ACCA Ductulator*, *Air Conditioning Contractors of America*, 2800 Shirlington Road, Suite 300, Arlington, VA 22206, (703) 575-4477, [www.acca.org](http://www.acca.org)
- *HVAC Duct Construction Standards*, 2005, 3rd Edition, SMACNA, (703) 803-2980, [www.smacna.org](http://www.smacna.org)
- *NFPA 58: Liquefied Petroleum Gas Code*, 2014, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)

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**The following reference material is recommended for study, but is not allowed in the examination center:**

- *Pipefitter's Handbook* Lindsey, F.R. (3<sup>rd</sup> Ed., 1967), Industrial Press, Inc., 200 Madison Avenue, New York, NY 10016.
- *Modern Hydronic Heating for Residential and Light Commercial Buildings*, John Siegenthaler, 2004, 2nd edition, Cengage Learning, 800.354.9706, [www.cengage.com](http://www.cengage.com)
- *Residential Oil Burners*, Weinberger, Herb. 3<sup>rd</sup> Edition, 2007, Delmar/Thomson Learning, P.O. Box 6904, Florence, KY 41022-6904, (800) 347-7707, [www.delmarlearning.com/](http://www.delmarlearning.com/).

## S-10 LIMITED HEATING COOLING JOURNEYPERSON

# of Questions	Minimum Passing Score	Time Allowed
70	70%	180 Minutes



## CONTENT OUTLINE

Subject Area	# of Items
Insulation	2
Hangers and Supports	2
Sound, Vibration and Seismic Control	1
Heating and Cooling Principles	3
Refrigerants and Refrigeration	5
Testing, Adjusting, and Balancing	3
Controls	5
A/C and Heat Pump Equipment	5
Furnaces and Heaters	5
Hydronics	4
Chimneys, Flues, and Vents	4
Combustion Air	2
Fuel Gas Systems	10
Ducts	6
Ventilation and Exhaust	3
Safety	4
Oil Burners	6

## REFERENCE LIST

The reference material listed below was used to prepare the questions for this examination. The examination may also contain questions based on trade knowledge or general industry practices. **Except for Code books**, you can base your answers on later editions of references as they become available. For Code questions, the examinations will be based **only** on the edition of the Code book that is listed.

Candidates may use a silent, nonprinting, non-programmable calculator in the examination center.

This examination is OPEN BOOK.

**The following reference materials are allowed in the examination center:**

- *International Mechanical Code* or *International Mechanical Code Commentary*, 2015, 2018, and 2021 Editions, International Code Council Inc., 800-786-4452, <http://shop.iccsafe.org>
- *International Residential Code for One- and Two-Family Dwellings*, 2015, 2018, and 2021, International Code Council, (800) 786- 4452, [www.iccsafe.org](http://www.iccsafe.org)
- *NFPA 31: Standard for the Installation of Oil-Burning Equipment*. (2006 or 2011). National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
- *NFPA 54: National Fuel Gas Code or National Fuel Gas Code Handbook*, 2012 or 2015, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org) - NOTE: You MUST use the longest length method for all gas pipe sizing questions.
- *Code of Federal Regulations - 29 CFR Part 1926 (OSHA)*, with latest available amendments, U.S. Government Printing Office, (866) 512-1800 or [https://www.osha.gov/pls/oshaweb/owastand.display\\_standard\\_group?p\\_toc\\_level=1&p\\_part\\_number=1926](https://www.osha.gov/pls/oshaweb/owastand.display_standard_group?p_toc_level=1&p_part_number=1926)  
OR  
*Code of Federal Regulations - 29 CFR Part 1926 Selections by PSI*, with latest available amendments, (866) 589-3088, [www.psionlinestore.com](http://www.psionlinestore.com) (See order form at the end of the Candidate Information Bulletin.)
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Goodheart-Willcox Publisher, 800-323-0440, [www.g-w.com/](http://www.g-w.com/)

- *ACCA Ductulator, Air Conditioning Contractors of America*, 2800 Shirlington Road, Suite 300, Arlington, VA 22206, (703) 575-4477, [www.acca.org](http://www.acca.org)
- *HVAC Duct Construction Standards*, 2005, 3rd Edition, SMACNA, (703) 803-2980, [www.smacna.org](http://www.smacna.org)
- *NFPA 58: Liquefied Petroleum Gas Code*, 2014, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
- *Manual J - Residential Load Calcs*, reprinted 2006, Eighth Full Edition, Air Conditioning Contractors of America (ACCA), 2800 Shirlington Road, Suite 300. Arlington, VA 22206, (703) 575-4477, [www.acca.org](http://www.acca.org)

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- *Modern Hydronic Heating for Residential and Light Commercial Buildings*, John Siegenthaler, 2004, 2nd edition, Cengage Learning, 800.354.9706, [www.cengage.com](http://www.cengage.com)
- *Residential Oil Burners*, Weinberger, Herb. 3<sup>rd</sup> Edition, 2007, Delmar/Thomson Learning, P.O. Box 6904, Florence, KY 41022-6904, (800) 347-7707, [www.delmarlearning.com](http://www.delmarlearning.com).



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Submit the licensing fee indicated on the passing score report for your trade examination with all passing score reports to the Connecticut Department of Consumer Protection.

**Connecticut Department of Consumer Protection  
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<input type="checkbox"/>	<a href="#">International Mechanical Code</a>	
<input type="checkbox"/>	<a href="#">Residential Oil Burners</a>	
<input type="checkbox"/>	<a href="#">Valve Handbook</a>	
<input type="checkbox"/>	<a href="#">Steam Plant Operation</a>	
<input type="checkbox"/>	<a href="#">Modern Hydronic Heating for Residential and Light Commercial Buildings</a>	
<input type="checkbox"/>	<a href="#">NFPA 54: National Fuel Gas Code (2006)</a>	
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