

**SOUTH CAROLINA CONTRACTOR’S LICENSING BOARD**

**COMMERCIAL CONTRACTOR  
CANDIDATE INFORMATION BULLETIN**

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**PSI licensure:certification**

3210 E Tropicana  
Las Vegas, NV 89121  
www.psiexams.com

**Please refer to [www.psiexams.com](http://www.psiexams.com) for the latest updates to this bulletin.**

## DEPARTMENT POLICY FOR CONTRACTOR BOARD EXAMINATIONS

The South Carolina Department of Labor, Licensing and Regulation has adopted the following policy for the administration of examinations for licensure as provided by the South Carolina Contractor's Licensing Board. This policy will ensure the integrity of licensing examinations by eliminating the opportunity for candidates to attain test scores by fraudulent means and the compromise of examinations provided by the board's examination provider:

- (1) any candidate that passes an exam shall not be allowed to take the same exam again;
- (2) any candidate that fails an exam shall be given a diagnostic report that will provide feedback about performance on a particular content domain, which will direct the candidate to areas that require further study; and
- (3) the department does not require the board's examination provider to provide a list of candidates for licensure examination.

Assistant Deputy Director of Labor, Licensing and Regulation

Effective: June 15, 2004

## EXAMINATIONS BY PSI

This Candidate Information Bulletin provides you with information about the examination and application process for becoming licensed as a commercial contractor in South Carolina. To be licensed, you must pass a Business and Law Examination on the South Carolina Code of Laws to confirm that you have attained at least a minimum level of knowledge regarding the principles, practices, statutes, and regulations. Most general and mechanical contractor classifications also require passing a technical examination. Those examinations are listed in this Candidate Information Bulletin. **The scope of work for these examinations can be found in the South Carolina Code of Laws booklet, "The Act" in section 40-11-410.**

The South Carolina Contractor's Licensing Board (state) has contracted with PSI Licensure:certification (PSI) to conduct its examination program. PSI provides examinations through a network of computer examination sites in South Carolina. PSI works closely with the state to be certain that examinations meet local as well as national requirements in basic principles of contractor services and examination development standards.

In order to obtain a license, candidates must pass the required examination(s) mandated by the state. Minimum qualification must be met before registering for the examination. Candidates for the general and mechanical contractor's license must have at least 2 years commercial experience within the last 5 years in the general or mechanical contractor classification in which these candidates are seeking licensure. The experience must be documented on an experience affidavit submitted with the commercial license application after passing the required examinations. Burglar and Fire Alarm

contractor candidates are not required to have work experience.

A license issued by the South Carolina Contractor's Licensing Board allows an entity to engage in commercial as well as residential construction. If an entity is solely engaged in residential construction, the South Carolina Residential Home Builders Commission must license the entity. You may obtain a license application and examination information by calling (803) 896-4696.

Effective September 1, 2002, Burglar and Fire Alarm contractors are required to pass the NTS Level I (burglar) and the NICET Level II (fire) examinations in addition to the examinations given by PSI. For information on NTS Level I certifications, contact the S.C. Alarm Association at (803) 252-0580. For NICET Level II, contact the Nat'l Institute for Certification in Engineering, 1420 King St, Alexandria, VA 22314-2794 (888) 476-4238.

Note: for burglar the NTS level 1 and for fire either the NTS level 1 or the NICET level II:

(3)(a) for burglar alarms, take the Level I training course and receive a certificate of completion from the National Training School; or

(b) for fire alarms, take the Level I training course and receive a certificate of completion from the National Training School or take the Level II training course and receive a certificate of completion from the National Institute for Certification in Engineering Technologies;

Examinations for each classification, except for Burglar and Fire Alarm classifications, **may only be taken 2 times in a 12-month period and thereafter only once in six months.** Once you are approved through PSI, you will receive a Registration Confirmation Notice, which is valid for 1 year, or until an examination classification has been failed twice within the referenced time frame. Candidates are required to submit a registration form and examination fee for each examination. **Note:** Business Management and Law for Commercial Contractors may be taken on an unlimited basis over a 12-month period.

All questions and requests for information about the examination and receiving the commercial license application should be directed to:

PSI  
3210 E Tropicana  
Las Vegas, NV 89121  
(800) 733-9267 • Fax (702) 932-2666  
[www.psiexams.com](http://www.psiexams.com)

Questions about requirements for licensure or which scope of regulated work requires a commercial contractor license should be directed to the:

South Carolina Contractor's Licensing Board  
PO Box 11329  
Columbia, SC 29211-1329  
(803) 896-4686  
[www.llr.state.sc.us/POL/Contractors](http://www.llr.state.sc.us/POL/Contractors)



The board is located in the Synergy Business Park on the frontage road off I-20 and Bush River Road, Kingstree Building, 110 Centerview Drive, Suite 102 Columbia, SC, 29210.

### TIPS FOR PREPARING FOR YOUR LICENSE EXAMINATION

The following suggestions will help you prepare for your license examination. Planned preparation increases your likelihood of passing.

- Start with a current copy of the 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.
- 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.
- Be sure to take proper identification with you to your scheduled examination appointment.
- Upon passing the examination, you may then submit your commercial license application to the SC Contractor's Licensing Board.

### DESCRIPTION OF EXAMINATIONS

The South Carolina Contractor's Licensing Board has approved the Examination Content Outlines. The outlines reflect the minimum knowledge required by commercial contractors to perform their duties to the public in a competent and responsible manner. Changes in the content of the examinations will not be made until changes are made in the reference books.

If there is conflicting information between a code, law, or regulation and another authorized reference text, please be aware that the requirements of the code, law, or regulation prevail, and that the examination questions will be referenced to the code, law, or regulation.

Refer to the last topic in this Candidate Information Bulletin called "Scope of Work, Examination Contents, and Examination References" and look for the specific Examination Portion/License Category or Subcategory in which you are applying.

### EXPERIMENTAL QUESTIONS

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

### EXAMINATION STUDY MATERIALS

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 overrides information from other sources or persons.

The list of possible study reference books or material for the commercial contractor examinations is listed after each commercial contractor scope of work (refer to the last topic in this Candidate Information Bulletin called "Scope of Work, Examination Contents, and Examination References" and look for the specific Examination Portion/License Category or Subcategory in which you are applying).

The reference materials listed were 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.

The list is given to identify possible resources to use in answering the examination questions and does not constitute an endorsement by PSI or by the South Carolina Contractor's Licensing Board. Some questions may be based upon general knowledge of the specific trade and may not be listed in the reference books.

The following list of bookstores is provided to help you locate the books you may plan to purchase prior to taking your examination.

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

Builder's Book Depot and Contractor's Resource  
(877) 624-2562

Contractors Library in Florida  
(800) 571-4777

Builders Book Depot  
[www.buildersbookdepot.com](http://www.buildersbookdepot.com)  
800-284-3434

Contractors Institute  
<https://cistore.contractorsinstitute.com/>  
877-542-3673

Contractor's Seminars, Inc.  
[www.scexams.com](http://www.scexams.com)  
803-337-4444 or (866) 772-9596

My Contractor License  
[www.mycontractorslicense.com](http://www.mycontractorslicense.com)  
877-699-0775



**NOTE: All Burglar and Fire Alarm Contractor candidates are required to pass the Alarm Code of Laws Examination and the technical alarm examination of the specific license category in which they are applying. All other commercial General and Mechanical Contractor candidates are required to pass the Business Management and Law for Contractors Examination in addition to any technical examinations required for the specific license category or subcategory in which they are applying.**

## EXAMINATION SCHEDULING PROCEDURES

Examinations (with the exception of the Burglar and Fire Alarm) may only be taken 2 times in a 12- month period and thereafter only once in six months. Burglar and Fire Alarm may test as often as desired.

### ON-LINE (www.psiexams.com)

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 [www.psiexams.com](http://www.psiexams.com). Internet registration is available 24 hours a day.

- Log onto PSI's website and create an account. You will be asked to put in your email address and the spelling of your name exactly as it is shown on your identification that will be presented at the examination site.
- You will be asked to select the examination. You will then enter your personal and contact information. You will then be ready to pay and schedule for the examination. Enter your zip code and a list of the examination sites closest to you will appear.

### TELEPHONE

For telephone registration, you will need a valid credit card (VISA, MasterCard, American Express or Discover). Call (800) 733-9267 and speak to a PSI registrar Monday through Friday between 7:30 am and 10:00 pm, and Saturday-Sunday between 9:00 am and 5:30 pm, Eastern Time.

### FAX

Complete the PSI registration form (found at the end of this bulletin), including your credit card number and expiration date. Fax the completed form to PSI (702) 932-2666. Fax registrations are accepted 24 hours a day.

Please allow 4 business days to process your Registration. After 4 business days, you may call PSI to schedule the examination, (800) 733-9267.

### STANDARD MAIL

Complete the PSI registration form (found at the end of this bulletin), and appropriate examination fee to PSI. Payment of fees can be made by valid credit card (VISA, MasterCard, American Express or Discover), company check, money order or cashier's check, made payable to PSI. Print your name on the check or money order to ensure that your fees are properly assigned. **CASH and PERSONAL CHECKS ARE NOT ACCEPTED.**

Please allow 2 weeks to process your registration. After 2 weeks, you may call PSI to schedule the examination Monday through Friday between 7:30 am and 10:00 pm, or Saturday-Sunday between 9:00 am and 5:30 pm, Eastern Time, (800) 733-9267.

### 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. If you elect not to disclose your social security number to PSI, please enclose a separate letter explaining this with your Examination Registration Form. However, you **must** provide it to the state.

### 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 must follow the instructions on the Exam Accommodations Request Form at the end of this Candidate Information Bulletin.

### CANCELING OR RESCHEDULING AN 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.

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

### MISSED APPOINTMENT OR LATE CANCELLATION

Your registration will be invalid, and 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; or
- Do not appear for your examination appointment; or
- Arrive after examination start time; or
- Do not present proper identification when you arrive for the examination.

### 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 (800) 733-9267 or check the website at [www.psiexams.com](http://www.psiexams.com). Every effort will be made to reschedule your examination at a convenient time as soon as possible. You will not be penalized. You will be rescheduled at no additional charge.



## EXAMINATION SITE LOCATIONS

### GREENVILLE/SPARTANBURG

Park East, Anderson Building  
150 Executive Center Drive, Suite 218  
Greenville, South Carolina 29615

*From I-85, take I-385 North towards Greenville. Take Roper Mountain exit (Exit 37) and go right (East). Turn right at first street (Independence Blvd). Go 0.7 miles and turn left on Executive Center Drive. The Anderson Building will be on your right.*

### COLUMBIA

Synergy Business Park  
Congaree Building  
121 Executive Center Drive, Suite 143  
Columbia, South Carolina 29210

*From I-20, take exit 63 (Bush River Road). Proceed west and turn right onto Berryhill Road. Turn left onto Executive Center Drive. Enter the Congaree Building through the front door. From the lobby take the corridor to the right to the end and turn left. PSI Suite 143 is on the left.*

### CHARLESTON

4600 Goer Drive, Suite 112A  
North Charleston, South Carolina 29406

*At juncture of I-26 and I-526, head Southeast in the direction of Charleston. Next exit is Montague Ave, exit East Montague. Take first right at Goer Drive. Site is adjacent to the Marriott Hotel.*

### BEAUFORT/HILTON HEAD

Regions Bank Building  
69 Robert Smalls Pky/SC-170, Unit 4D  
Beaufort, South Carolina 29906

*From I-95, take the US-17N exit (Exit Number 33) towards Beaufort. After approximately 9 miles, US 21 splits off to the right and goes to Beaufort and US 17 goes to the left towards Charleston. Continue towards Beaufort on US 21 for approximately 12 miles. Turn sharp right onto SC 170 (McDonalds is on the corner) and continue for .3 miles. The building is on your left.*

### MYRTLE BEACH

1601 North Oak Street, Suite 305  
Myrtle Beach, South Carolina 29577

*From the west: Take Rte 501 to 17 Bypass North. Take 17 Bypass North one exit to 10th Avenue (Mr Joe White Ave). Turn right and go about 2 miles to Oak St. Take left on Oak St and follow to #1601 (Myrtle Offices). Go around to back of building. PSI is in Suite #305*

*From the south: Take 17 Bypass North to 10th Avenue. Turn right and follow above directions.*

*From the North: Take Rte 31 to Robert Grissom Parkway. Follow RGP to 21st Avenue. Turn left on 21st Ave and follow to Oak St. Turn right on Oak St and follow to #1601. (Myrtle Offices). PSI is around the back of building.*

### CHARLOTTE

Tyvola Executive Park 1  
5701 Westpark Dr, #202  
Charlotte, NC 28217

*From I-77S towards Columbia, exit Tyvola Road (Exit #5). Turn left at Tyvola Road. Make a right at Westpark Dr. From I-77N, exit Tyvola Road (Exit #5) towards Coliseum Area. Bear right at Tyvola Road. Turn right at Westpark Dr.*

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 must register for the exam with their LEGAL first and last name as it appears on their government issued identification. All required identification below must match the first and last name under which the candidate is registered. Candidates are required to bring two (2) forms of valid (non-expired) signature bearing identification to the test site. If the candidate fails to bring proper identification or the candidate names do not match, the candidate will not be allowed to test and their examination fee will not be refunded.

### **PRIMARY 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.

### **SECONDARY IDENTIFICATION - Choose One**

- Credit Card (must be signed)
- Social Security Card
- US Issued Birth Certificate with Raised Seal

\*NOTE: Student ID and employment ID are **NOT** acceptable forms of identification.

If you cannot provide the required identification, you must call (800) 733-9267 at least 3 weeks prior to your scheduled appointment to arrange a way to meet this security requirement. *Failure to provide all of the required identification at the time of the examination without notifying PSI is considered a missed appointment, and you will not be able to take the examination.*



## SECURITY PROCEDURES

The Commercial Contractors examinations are OPEN book. Candidates may bring reference books listed in this bulletin. Reference books may be highlighted, underlined, and/or indexed. They must be otherwise unmarked (not written in) and may not contain additional papers (loose or attached). **Proctors will thoroughly inspect all books before and after your examination.**

References may be tabbed/indexed with permanent tabs only. (Permanent tabs are defined as tabs that would tear the page if removed). Temporary tabs, (defined as Post-It notes) or other tabs that may be removed without tearing the page) are not allowed and must be removed from the reference before the exam will begin.

Please note a “ruler” or “scale” is not required for these examinations.

**NO MATTER WHAT IS ON THE TAB PACKAGE, IF THE PSI PROCTOR IS ABLE TO REMOVE THE TABS WITHOUT RIPPING THE PAGE, YOU WILL NEED TO REMOVE THE TABS BEFORE YOU TAKE THE EXAM. DO NOT USE THE TABS THAT HAVE PAPER INSERTS. THE PAPER INSERTS WILL BE REMOVED.**

THESE REFERENCES WILL NOT BE AVAILABLE IN THE EXAMINATION CENTER.

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, hoodies, 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.

- 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.

## REVIEW OF EXAMINATION QUESTIONS

PSI, in cooperation with the South Carolina Contractor's Licensing Board, will be consistently evaluating the examinations being administered to ensure that the examinations accurately measure competency in the required knowledge areas. Comments may be entered on the computer keyboard during the examination. Your comments regarding the questions and the examinations are welcomed. Comments will be analyzed by PSI examination development staff. While PSI does not respond to individuals regarding these comments, all substantive comments are reviewed. If a discrepancy is found during the comment review, PSI and the department may re-evaluate candidates' results and adjust them accordingly. **This is the only review of the examination available to candidates.**



## TAKING THE EXAMINATION BY COMPUTER

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

### IDENTIFICATION SCREEN

You will be directed to a semiprivate testing station to take the examination. When you are seated at the testing station, you will be prompted to confirm your name, identification number, and the examination for which you are registered.

### 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 SCREEN

The “function bar” at the top of the test question screen provides mouse-click access to the features available while taking the examination.



The screenshot shows a web-based examination interface. At the top, there is a navigation bar with icons for Mark, Comments, Goto, Help, and End. Below this is a status bar displaying: Question: 3 of 40, Answered: 2, Unanswered: 1, Marked: 0, View: All, Time Left(Min): 359. The main content area shows question 3: "What do the stars on the United States of America's flag represent?". Below the question is a text input field. Underneath, it says "(Choose from the following options)" and lists four radio button options: 1. Presidents, 2. Colonies, 3. States, and 4. Wars. At the bottom of the question area, there are navigation buttons: "<< Back" and "Next >>".

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.

## SCORE REPORTING

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 pass, you will immediately receive a successful notification and performance summary on the screen.
  - If you do not pass, you will immediately receive an unsuccessful notification on the screen along with a printed diagnostic report indicating your strengths and weaknesses by examination type.
- On paper - an official result report will be printed at the examination site.

### DUPLICATE SCORE REPORTS

You may request a duplicate score report after your examination by calling 800-733-9267 or by emailing [scorereport@psionline.com](mailto:scorereport@psionline.com).

## SCOPE OF WORK, EXAMINATION CONTENTS, AND EXAMINATION REFERENCES

### AIR CONDITIONING EXAMINATION CONTENT OUTLINE

There are 80 questions in this examination. You will need to answer 56 questions correctly in order to pass. You are allowed 4 hours to complete this examination.

**NOTE:** All Air Conditioning - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Air Conditioning Examination.

#### Air Conditioning Scope of Work

Air Conditioning which includes the installation, replacement, alteration, and repair of air conditioning equipment and systems which consist of a number of components necessary to produce conditioned air for environmental heating or cooling or both, within buildings. Hot water or steam heating systems or components are not included under this classification.

#### Air Conditioning Examination Content

1. General Piping (1 Item)
2. General Tubing (1 Item)
3. Pipe Assembly (1 Item)
4. Piping Systems (4 Items)
5. Drain Piping (1 Item)
6. Valves (1 Item)
7. Piping Specialties (1 Item)
8. Pumps (2 Items)
9. Piping Insulation (1 Item)
10. Hangers and Supports (General) (1 Item)



11. Mechanical Sound, Vibration, and Seismic Control (1 Item)
12. Water Treatment for Mechanical Systems (1 Item)
13. Heating and Cooling Principles (2 Items)
14. Refrigerants (1 Item)
15. Load Calculations (7 Items)
16. Heating and Cooling Equipment (1 Item)
17. Air Compressors (1 Item)
18. Testing, Adjusting, and Balancing (TAB) (2 Items)
19. HVACR Control Fundamentals (1 Item)
20. Control Schematics and Wiring Diagrams (1 Item)
21. HVACR Control Systems (1 Item)
22. Machine Room (1 Item)
23. Air Conditioning Systems (3 Items)
24. Heat Pumps (4 Items)
25. Furnaces (Warm Air Heating Equipment) (2 Items)
26. Specialized Heaters (2 Items)
27. Chimneys, Flues, Vents, and Vent Connectors (3 Items)
28. Combustion Air (2 Items)
29. General Fuel Knowledge (1 Item)
30. Natural Gas (2 Items)
31. LP Gas (2 Items)
32. General Duct Systems Knowledge and Principles (4 Items)
33. Duct Conversions/Equivalencies (4 Items)
34. Mechanical Sheet Metal Devices/Systems (2 Items)
35. Duct System Components (5 Items)
36. Metal Ducts (3 Items)
37. Fiberglass Ducts (1 Item)
38. Filtering Systems (1 Item)
39. Ventilation Equipment and Devices (1 Item)
40. Exhaust Systems (2 Items)
41. Safety (2 Items)

#### Air Conditioning Reference Books

1. **South Carolina International Mechanical Code -OR- International Mechanical Code**, 2015 edition, International Code Council, 800-786-4452, [shop.iccsafe.org](http://shop.iccsafe.org)
2. **South Carolina International Fuel Gas Code -OR- International Fuel Gas Code**, 2015 edition, International Code Council, 800-786-4452, [shop.iccsafe.org](http://shop.iccsafe.org)
3. **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.)

4. **Manual N - Commercial Load Calculation for Small Commercial Buildings**, 5th Edition, 2008, Air Conditioning Contractors of America (ACCA), (703) 575-4477, [www.acca.org](http://www.acca.org)
5. **Manual D - Residential Duct Systems**, 3rd Edition, 2009, Air Conditioning Contractors of America, 1712 New Hampshire Avenue N.W., Washington, DC 20009
6. **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)
7. **Pipefitter's Handbook**, 1967, 3rd Edition, Forest R. Lindsey, Industrial Press, Inc., 200 Madison Avenue, New York, NY 10016
8. **ACCA Ductulator**, Air Conditioning Contractors of America, 1712 New Hampshire Avenue N.W., Washington, DC 20009
  - 8.1. **Refrigeration and Air Conditioning Technology**, 6th edition, 2009, Whitman/Johnson/Tomczyk/Silberstein, Cengage Learning, [www.cengage.com](http://www.cengage.com)
  - 8.2. **Modern Refrigeration and Air Conditioning**, 19th or 20th edition, Goodheart-Wilcox Company, [www.g-w.com](http://www.g-w.com)
  - 8.3. **Trane Air Conditioning Manual**, 1996, TRANE Company, 8929 Western Way, Suite #1, Jacksonville, FL 32256
  - 8.4. **ASHRAE Handbook of Fundamentals**, 1997, American Society of Heating, Refrigeration, and Air Conditioning Engineers, 1791 Tullie Circle, Atlanta, GA 30329

#### ALARM CODE OF LAWS EXAMINATION CONTENT OUTLINE

There are 20 questions in this examination. You will need to answer 14 questions correctly in order to pass. You are allowed 1 hour to complete this examination. **NOTE:** All Burglar Alarm and Fire Alarm Contractor candidates are required to pass the Alarm Code of Laws Examination and the technical examination of the specific license subcategory in which they are applying.

#### Alarm Code of Laws Scope of Work

The Alarm Code of Laws regulates what an alarm contractor can and cannot do in the business of alarm contracting within the State of South Carolina and it is very important that the applicant is aware of the laws regulating alarm contracting in order to avoid a fine or penalty.





## Alarm Code of Laws Examination Content

South Carolina Code of Laws regulating alarm contractors.

### Alarm Code of Laws Reference Book

**Chapter 79 of the South Carolina Code of Laws, Burglar and Fire Alarm Contractor's License Law, 2001,**

<http://www.llr.state.sc.us/POL/Contractors>. For the Alarm Code of Law Reference Chapter 79, you can download from the Internet and bring into the testing center, as long as it is stapled, spiral bound or 3-hole punched and put in a binder.

**NOTE:** All Burglar and Fire Alarm Contractor candidates are required to pass the Alarm Code of Laws Examination and the technical alarm examination of the specific license category in which they are applying.

## ASPHALT PAVING EXAMINATION CONTENT OUTLINE

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 3 hours to complete this examination. **NOTE:** All Asphalt Paving - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Asphalt Paving Examination.

### Asphalt Paving Examination Content

1. Paving - Compaction and Stabilization (9 Items)
2. Paving - Asphalt Paving Procedures (9 Items)
3. Paving - Asphalt Properties and General Uses (10 Items)
4. Paving - Asphalt Emulsions - Uses and Application (6 Items)
5. Paving - Asphalt Maintenance Applications (8 Items)
6. Concrete (8 Items)

### Asphalt Paving Reference Books

1. **Construction Planning, Equipment, and Methods**, 8<sup>th</sup> Edition, R.L. Peurifoy, McGraw-Hill Publishing, Inc., PO Box 545, Blacklick, OH 43004-0545
2. **The Contractor's Guide to Quality Concrete Construction**, 2005, 3rd Edition, American Concrete Institute, (248) 848-3700, [www.concrete.org](http://www.concrete.org)
3. **Excavation and Grading Handbook**, 2006, Craftsman Book Company, PO Box 6500, Carlsbad, CA 92018
4. **Standard Specifications for Highway Construction**, 2007, South Carolina Department of Highways & Public Transportation, PO Box 191, Columbia, SC 29202, (803) 737-4533. Available online (only): [http://www.scdot.org/doing/doingPDFs/2007\\_full\\_specbook.pdf](http://www.scdot.org/doing/doingPDFs/2007_full_specbook.pdf) -OR- Standard Specifications for Highway Construction Selections as of 2007 by PSI, (800) 733-9267. (See order form at the end of this bulletin.)
5. **South Carolina 811 Excavator Manual**, latest edition, <https://sc811.com/excavator-manual/>

## BOILER INSTALLATION EXAMINATION CONTENT OUTLINE

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 3 hours to complete this examination. **NOTE:** All Boiler Installation - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Boiler Installation Examination.

### Boiler Installation Scope of Work

Boiler installation' which includes those who are qualified to install, repair, and service boilers and boiler piping including the boiler auxiliary equipment, controls, and actuated machinery and dryer rolls. To qualify for this subclassification, a person must pass a technical examination administered by the board or must be the holder of the American Society of Mechanical Engineers (ASME) 'S' stamp or hold the National Board of Boiler and Pressure Vessel Inspectors (NBBPVI) 'R' stamp and meet the requirements for licensure according to this chapter.

1. Code Compliance (10 Items)
2. Boilers - Low Pressure (12 Items)
3. Boilers - High Pressure (8 Items)
4. Boilers - Steam Traps (5 Items)
5. Boilers - Safety (5 Items)
6. Piping (4 Items)
7. Welding (6 Items)

### Boiler Installation Reference Books

1. **South Carolina International Mechanical Code -OR- International Mechanical Code**, 2015 edition, International Code Council, 800-786-4452, [shop.iccsafe.org](http://shop.iccsafe.org)
2. **South Carolina International Fuel Gas Code -OR- International Fuel Gas Code**, 2015 edition, International Code Council, 800-786-4452, [shop.iccsafe.org](http://shop.iccsafe.org)
3. **NFPA 85 - Single Burner Boiler Operations**, 2011, National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471, 800 344-3555, [www.nfpa.org](http://www.nfpa.org)
4. **Low Pressure Boilers**, Frederick M. Steingress, Daryl R. Walker, 4th Edition, 2013, American Technical Publishers, Inc., (800) 323-3471, [www.atplearning.com](http://www.atplearning.com)
5. **High Pressure Boilers**, 5th Edition, 2012, Frederick M. Steingress & Harold J. Frost, American Technical Publishers, Inc., (800) 323-3471, [www.atplearning.com](http://www.atplearning.com)
6. **Pipefitter's Handbook**, 1967, 3<sup>rd</sup> Edition, Forest R. Lindsey, Industrial Press, Inc., 200 Madison Avenue, New York, NY 10016
7. **Pipe Welding Procedures**, 1973, H. Rampaul, Industrial Press, Inc., 200 Madison Avenue, New York, NY 10016
8. **System Design Manual - Part III: Piping Design, Carrier**, 1973, Carrier Air Conditioning Company, Carrier Parkway, Literature Distribution, Bldg. 8, PO Box 4808, Syracuse, NY 13221



## BRIDGES EXAMINATION CONTENT OUTLINE

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 3 hours to complete this examination. **NOTE:** All Bridges - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Bridges Examination.

1. Concrete (12 Items)
2. Concrete - Reinforcing Steel (5 Items)
3. Concrete Formwork (4 Items)
4. Structural Steel (8 Items)
5. Pile Driving/Sitework (8 Items)
6. Paving (3 Items)
7. Safety - Code of Federal Regulations (5 Items)
8. Estimating (3 Items)
9. Business - Math (2 Items)

### Bridges Reference Books

1. **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.)
2. **Standard Specifications for Highway Construction**, 2007, South Carolina Department of Highways & Public Transportation, PO Box 191, Columbia, SC 29202, (803) 737-4533. Available online (only): [http://www.scdot.org/doing/doingPDFs/2007\\_full\\_specbook.pdf](http://www.scdot.org/doing/doingPDFs/2007_full_specbook.pdf) OR **Standard Specifications for Highway Construction Selections as of 2007 by PSI**, (800) 733-9267. (See order form at the end of this bulletin.)
3. **The Contractor's Guide to Quality Concrete Construction**, 2005, 3rd Edition, American Concrete Institute, (248) 848-3700, [www.concrete.org](http://www.concrete.org)
4. **South Carolina 811 Excavator Manual**, latest edition, <https://sc811.com/excavator-manual/>

## (LIMITED) BUILDING CONTRACTOR EXAMINATION CONTENT OUTLINE

There are 80 questions in this examination. You will need to answer 56 questions correctly in order to pass. You are allowed 5 hours to complete this examination. **NOTE:** All Limited Building Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Limited Building Contractor Examination.

In addition to the number of examination items specified, a small number of "experimental" questions will be administered to candidates during this examination. The use of such questions is an essential step in developing accurate future examinations. These questions will NOT be scored, however, for this examination time to answer them has been added to the time allowed.

### (Limited) Building Contractor Scope of Work

For Group #1, #2, and #3 limitations to construct or remodel commercial or residential buildings. Construction is limited to 3 stories in height.

Licensees under this classification may perform ancillary work, including grading, associated with the building or structure which the licensee has been engaged to construct. However, if a project includes work performed under a Mechanical Contractor sub-classification or any of these license subclassifications, the licensee must have a license in the appropriate license classification or subclassification to perform the work: Swimming Pools, Bridges, Boring and Tunneling, Water and Sewer Lines, Pipe Lines, Railroad Lines, Specialty Roofing, Marine, Water and Sewer Plants, and Asphalt Paving.

### (Limited) Building Contractor Examination Content

1. Sitework (7 Items)
2. Concrete (10 Items)
3. Masonry (10 Items)
4. Metals (10 Items)
5. Carpentry (12 Items)
6. Thermal and Moisture Protection (9 Items)
7. Doors and Windows (2 Items)
8. Finishes (2 Items)
9. Safety (5 Items)
10. General Code, Plan Reading and Estimating (13 Items)

### (Limited) Building Contractor Reference Books

1. **South Carolina International Building Code -OR- International Building Code**, 2015 edition, International Code Council, 800-786-4452, [shop.iccsafe.org](http://shop.iccsafe.org)
2. **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.)
3. **Modern Masonry - Brick, Block, Stone**, Clois E. Kicklighter, 8th edition (2015). The Goodheart-Willcox Company, (800) 323-0440, [www.g-w.com](http://www.g-w.com)



4. **Technical Digest No. 9 - Handling and Erection of Steel Joists and Joist Girders**, 3rd Edition, 2008, Steel Joint Institute, 234 W. Cheves Street, Florence, SC 29501, Phone: (843) 407-4091, Fax (843) 407-4044, [www.steeljoist.org](http://www.steeljoist.org).
5. **Carpentry and Building Construction**, 2010 or 2016 (Student Edition), John L. Feirer and Mark D. Feirer, McGraw-Hill, [www.mheducation.com](http://www.mheducation.com)
6. **Roofing Construction and Estimating**, 1995, Daniel Atcheson, Craftsman Book Company, PO Box 6500, Carlsbad, CA 92018
7. **Contractor's Guide to Quality Concrete Construction**, 2<sup>nd</sup> Edition, 1998; American Concrete Institute, POB 9094, Farmington Hills, MI 48333 248/848-3700, [www.aci-int.org](http://www.aci-int.org)
8. **Pipe and Excavation Contracting**, 2011; Dave Roberts, Craftsman Book Company, P.O. Box 6500, Carlsbad, CA 92018, 800/829-8123, [www.craftsman-book.com/cbcstore/](http://www.craftsman-book.com/cbcstore/)
9. **South Carolina 811 Excavator Manual**, latest edition, <https://sc811.com/excavator-manual/>

#### NASCLA-ACCREDITED EXAMINATION - COMMERCIAL GENERAL BUILDING CONTRACTOR

The NASCLA Accredited Examination Program was designed to assist contractors who wish to be licensed in multiple jurisdictions by offering a streamlined test taking option for the trade portion of the contractor examination. The **NASCLA Accredited Examination for Commercial General Building Contractors** was designed to assist candidates applying within individual state agencies for the general commercial building contractor classification or similar to.

Candidates who take and pass the NASCLA Accredited Examination can access NASCLA's National Examination Database (NED) located on <https://ned.nascla.org> to electronically send their transcripts to jurisdictions that accept the examination in lieu of their state specific trade portion, thereby reducing redundant licensing requirements. Candidates are expected to follow individual state agency applications to become licensed, in addition to taking a business and law examination, etc. If you are unsure if this examination will meet your specific license requirements in a participating state agency, please contact the state agency directly to confirm. A complete list of participating state agencies can be found on NASCLA's website by visiting: [www.nascla.org/page/ParticipatingStateAg](http://www.nascla.org/page/ParticipatingStateAg)

Licenses under this classification may perform ancillary work, including grading, associated with the building or structure which the licensee has been engaged to construct. However, if a project includes work performed under a Mechanical Contractor sub-classification or any of these license subclassifications, the licensee must have a license in the appropriate license classification or subclassification to perform the work: Swimming Pools, Bridges, Boring and Tunneling, Water and Sewer Lines, Pipe Lines, Railroad Lines, Specialty Roofing, Marine, Water and Sewer Plants, and Asphalt Paving.

For questions regarding the examination, please contact NASCLA via email to [info@nascla.org](mailto:info@nascla.org) or by phone at (623) 587-9354.

There are 115 questions in this examination. You will need to answer 81 questions correctly in order to pass. You are allowed 330 minutes to complete this examination.

**NOTE:** All Unlimited Building Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Unlimited Building Contractor Examination.

#### NASCLA-Accredited Examination - Commercial General Building Contractor Examination Content

1. Planning and Estimating (21 Items)
2. Financial and Project Management (21 Items)
3. Safety (19 Items)
4. Site Construction (15 Items)
5. Concrete (8 Items)
6. Masonry (3 Items)
7. Metals (5 Items)
8. Wood Foundations and Framing (5 Items)
9. Thermal Moisture Protection (4 Items)
10. Doors, Windows, and Glazing (5 Items)
11. Finishes (7 Items)
12. Specialty Equipment and Conveyance Systems (2 Items)

#### NASCLA-Accredited Examination - Commercial General Building Contractor Examination Content Reference Books

1. **Construction Jobsite Management**, 4th Edition, 2017, William R. Mincks, Hal Johnston, Delmar/Thomson Learning, PO Box 6904, Florence, KY 41022-6904, Phone (800) 347-7707, Fax (800) 487-8488, [www.delmarlearning.com](http://www.delmarlearning.com)
2. **Construction Project Management**, 2014, 4<sup>th</sup> Edition, Frederick Gould, Nancy Joyce, Pearson Education, Inc. publishing as Prentice Hall, One Lake Street, Upper Saddle River NJ, 07458, 800-848-9500.
3. **ACI 318-11 or ACI 318-14 (2011 or 2014): Building Code Requirements for Structural Concrete and Commentary**, American Concrete Institute, (248) 848-3700, [www.concrete.org](http://www.concrete.org)
4. **BCSI: Guide to Good Practice for Handling, Installing, Restraining, and Bracing of Metal Plate Connected Wood Trusses**, 2013 (updated March 2015), Structural Building Components Association and Truss Plate Institute, (608) 274-4849, [www.sbcindustry.com](http://www.sbcindustry.com)
5. **Contractor's Guide to Business, Law and Project Management**, 12<sup>th</sup> 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).
6. **Erectors' Manual - Standards and Guidelines for the Erection of Pre Cast Concrete Products**, 1999, 2nd Edition, Publisher- Precast/Prestressed Concrete



Institute (PCI), 209 W. Jackson Blvd, Chicago, IL 60606-6938, Phone (312) 786-0300, Fax (312) 786-0353, [www.pci.org](http://www.pci.org)

7. **Training and Certification of Field Personnel for Unbonded Post-Tensioning - Level 1 Field Fundamentals**, 2003, 3rd Edition, Publisher- Post-Tensioning Institute, 1717 W. Northern Avenue, Suite 114, Phoenix, AZ 85021, Phone (602) 870-7540, Fax (602) 870-7541, [www.post-tensioning.org](http://www.post-tensioning.org)
8. **SDI (Steel Deck Institute) Manual of Construction with Steel Deck**, 2006, 2nd Edition, Publisher-Steel Deck Institute, PO Box 25, Fox River Grove, IL 60021, Phone (847) 458-4647, Fax (847) 458-4648, [www.sdi.org](http://www.sdi.org)
9. **Pipe and Excavation Contracting**, 2011, Author-Dave Roberts, Craftsman Book Company, P.O. Box 6500, Carlsbad, CA 92018, Phone (800) 829-8123, Fax (631) 924-6580, <http://craftsmanbook.com>
10. **Gypsum Construction Handbook**, 7<sup>th</sup> edition, 2014, United States Gypsum Company (USG), RS Means Publishing, 700 Longwater Drive, Norwell, MA 02061, 800-334-3509, Fax: 800-632-6732, <http://rsmeans.reedconstructiondata.com>
11. **Placing Reinforcing Bars, Recommended Practices**, 2011, 9th edition, Concrete Reinforcing Steel Institute, 933 North Plum Grove Rd, Schaumburg, IL 60173, Phone (800) 328-6306, <http://www.crsi.org/>
12. **Technical Digest No. 9 - Handling and Erection of Steel Joists and Joist Girders**, 3rd Edition, 2008, Steel Joint Institute, 234 W. Cheves Street, Florence, SC 29501, Phone: (843) 407-4091, Fax (843) 407-4044, [www.steeljoist.org](http://www.steeljoist.org).
13. **Modern Masonry - Brick, Block, Stone**, Clois E. Kicklighter, 8th edition (2015). The Goodheart-Willcox Company, (800) 323-0440, [www.g-w.com](http://www.g-w.com)
14. **Principles and Practices of Commercial Construction**, 2014, 9th Edition, Author- Cameron K. Andres and Ronald C. Smith, Publisher- Pearson Education, Inc., One Lake Street, Upper Saddle River, NJ 07458, Phone (201) 236-7000, [pearsoned.com](http://pearsoned.com)
15. **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.)
16. **Carpentry and Building Construction**, 2010 or 2016 (Student Edition), John L. Feirer and Mark D. Feirer, McGraw-Hill, [www.mheducation.com](http://www.mheducation.com)
17. **ANSI Accessible and Usable Buildings and Facilities**, 2009, American National Standards Institute, 1819 L Street NW, Washington, DC 20036, (202) 293-8020, [www.ansi.org](http://www.ansi.org)
18. **Roofing Construction and Estimating, Daniel Atcheson**, 1995, Craftsman Book Company, (800) 829-8123, [www.craftsman-book.com/products](http://www.craftsman-book.com/products)
19. **The Contractor's Guide to Quality Concrete Construction**, 2005, 3rd Edition, American Concrete Institute, (248) 848-3700, [www.concrete.org](http://www.concrete.org)

20. **Green Building Fundamentals**, Michael Montoya, 2011, 2<sup>nd</sup> edition, Pearson Education Publishing, Pearson Publishing, [www.informit.com/sales/df](http://www.informit.com/sales/df)
21. **South Carolina International Building Code -OR- International Building Code**, 2012 or 2015 Edition, International Code Council, (800) 786-4452, [www.iccsafe.org](http://www.iccsafe.org).

## BURGLAR ALARM EXAMINATION CONTENT OUTLINE

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 3 hours to complete this examination. **NOTE:** All Burglar Alarm candidates are required to pass the Alarm Code of Laws Examination and the Burglar Alarm Examination.

### General Electrical Knowledge (14 Items)

1. Low - Voltage (9 Items)
2. Intrusion Detection and Alarm Systems (10 Items)
3. Alarm Technology (17 Items)

### Burglar Alarm Reference Books

1. **NFPA 70 National Electrical Code or National Electrical Code Handbook**, 2014 edition, National Fire Protection Association, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
2. **Understanding and Servicing Alarm Systems**, 1999, 3rd Edition, H. William Trimmer, Butterworth-Heinemann, 225 Wildwood Avenue, Attn: Order Processing Department, Woburn, MA 01801. [www.store.elsevier.com](http://www.store.elsevier.com)
3. **Security: A Guide to Security System Design and Equipment Selection and Installation**, 1994, Neil Cumming, Butterworth-Heinemann, 225 Wildwood Avenue, Attn: Order Processing Department, Woburn, MA 01801. [www.store.elsevier.com](http://www.store.elsevier.com)
4. **Security Industry Dictionary, 2nd Edition**, 2000, National Burglar and Fire Alarm Association (NBFAA), National Training School (Contact Ann Dowdy, NBFAA/NTS Education & Standards Coordinator), Tel. (866) 636-1687, Fax (985) 626-8128, [nts@alarm.org](mailto:nts@alarm.org)
5. **Certified Alarm Technician Level 1 Student Manual**, National Burglar and Fire Alarm Association (NBFAA), National Training School (Contact Ann Dowdy, NBFAA/NTS Education & Standards Coordinator), Tel. (866) 636-1687, Fax (985) 626-8128, [nts@alarm.org](mailto:nts@alarm.org)

## BUSINESS MANAGEMENT AND LAW FOR COMMERCIAL CONTRACTORS CONTENT OUTLINE

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 125 minutes to complete this examination. **NOTE:** All Commercial Contractor candidates, except Fire Alarm and Burglar Alarm candidates, are required to pass the Business Management and Law for Contractors Examination and the technical examination of the specific license subcategory that they are applying for.



1. Business Management (2 Items)
2. Estimating and Bidding (10 Items)
3. Contracts and Agreements (12 Items)
4. Project Management (5 Items)
5. Insurance and Bonding (2 Items)
6. Safety Recordkeeping and Reporting (1 Item)
7. Labor Laws and Employment Regulations (3 Items)
8. Financial Management (7 Items)
9. Tax Laws (3 Items)
10. Liens (3 Items)
11. Environmental Laws and Regulations (2 Items)

**Business Management and Law for Commercial Contractors  
Reference Book**

***NASCLA Contractors Guide to Business, Law and Project Management - South Carolina Commercial Contractors***, 7th 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).

**CONCRETE EXAMINATION CONTENT OUTLINE**

There are 50 questions in this examination. You will need to answer 35 questions in order to pass. You are allowed 3 hours to complete this examination.

**NOTE:** All Concrete Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Concrete Examination.

1. Safety (6 Items)
2. Concrete - Earthwork (7 Items)
3. Concrete (15 Items)
4. Concrete - Reinforcement (10 Items)
5. Concrete - Formwork (12 Items)

**Concrete Reference Books**

1. ***International Building Code***, 2015 edition, International Code Council, 800-786-4452, [shop.iccsafe.org](http://shop.iccsafe.org)
2. ***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.)
3. ***Formwork for Concrete***, 2005, 7<sup>th</sup> Edition, M.K. Hurd American Concrete Institute, 38800 International Way/Country Club Drive, PO Box 9094, Farmington Hills, MI 48333

4. ***The Contractor's Guide to Quality Concrete Construction***, 2005, 3rd Edition, American Concrete Institute, (248) 848-3700, [www.concrete.org](http://www.concrete.org)
5. ***Placing Reinforcing Bars, Recommended Practices***, 9th Edition, 2011, Concrete Reinforcing Steel Institute, (800) 328-6306, [www.crsi.org](http://www.crsi.org)
6. ***South Carolina 811 Excavator Manual***, latest edition, <https://sc811.com/excavator-manual/>

**CONCRETE PAVING EXAMINATION  
CONTENT OUTLINE**

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 3 hours to complete this examination. **NOTE:** All Concrete Paving - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Concrete Paving Examination.

1. Sitework - Surveying Streets and Highways (2 Items)
2. Sitework - Surveying Buildings (2 Items)
3. Sitework - Measurements and Markings (3 Items)
4. Sitework - Excavating and Grading (4 Items)
5. Sitework - Subbases (5 Items)
6. Sitework - Compaction and Stabilization (5 Items)
7. Concrete (12 Items)
8. Concrete - Formwork (4 Items)
9. Concrete - Reinforcement (4 Items)
10. Safety - Code of Federal Regulations (4 Items)
11. Estimating - Plan Reading (5 Items)

**Concrete Paving Reference Books**

1. ***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.)
2. ***The Contractor's Guide to Quality Concrete Construction***, 2005, 3rd Edition, American Concrete Institute, (248) 848-3700, [www.concrete.org](http://www.concrete.org)
3. ***Standard Specifications for Highway Construction***, 2007, South Carolina Department of Highways & Public Transportation, PO Box 191, Columbia, SC 29202, (803) 737-4533. Available online (only): [http://www.scdot.org/doing/doingPDFs/2007\\_full\\_specbook.pdf](http://www.scdot.org/doing/doingPDFs/2007_full_specbook.pdf) -OR- Standard Specifications for Highway Construction Selections as of 2007 by PSI, (800) 733-9267. (See order form at the end of this bulletin.)
4. ***Construction Planning, Equipment, and Methods***, 8<sup>th</sup> Edition, R.L. Peurifoy, McGraw-Hill Publishing, Inc., PO Box 545, Blacklick, OH 43004-0545



5. *Excavation and Grading Handbook*, 8<sup>th</sup> Edition, Craftsman Book Company, PO Box 6500, Carlsbad, CA 92018
6. *South Carolina 811 Excavator Manual*, latest edition, <https://sc811.com/excavator-manual/>

#### ELECTRICIAN EXAMINATION CONTENT OUTLINE

There are 80 questions in this examination. You will need to answer 56 questions correctly in order to pass. You are allowed 5 hours to complete this examination. **NOTE:** All Electrician - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Electrician Examination.

In addition to the number of examination items specified, a small number of "experimental" questions will be administered to candidates during this examination. The use of such questions is an essential step in developing accurate future examinations. These questions will NOT be scored, however, for this examination time to answer them has been added to the time allowed.

1. General Electrical Knowledge (9 Items)
2. Service, Feeders, and Branch Circuits (9 Items)
3. Grounding and Bonding (9 Items)
4. Conductors and Cables (9 Items)
5. Raceways and Boxes (9 Items)
6. Special Occupancies and Equipment (2 Items)
7. Electrical Power (7 Items)
8. Motors (7 Items)
9. Low Voltage (2 Items)
10. Lighting (5 Items)
11. Illuminated Signs (2 Items)
12. Fire Detection and Alarm Systems (2 Items)
13. Safety Information (8 Items)

#### Electrician Reference Books

1. *NFPA 70 National Electrical Code or National Electrical Code Handbook*, 2014 edition, National Fire Protection Association, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
2. *NFPA 72 - National Fire Alarm Code*, 2013, National Fire Protection Association, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
3. *American Electricians' Handbook*, Croft, Hartwell, and Summers, 16th Edition, 2013, McGraw-Hill, (800) 262-4729, [shop.mcgraw-hill.com](http://shop.mcgraw-hill.com)
4. *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.)

5. *Key Word Index*, (Edition to match the NEC in #1), Tom Henry, Tom Henry Bookstore, 7449 Citrus Avenue, Winter Park, FL 32792.
6. *South Carolina 811 Excavator Manual*, latest edition, <https://sc811.com/excavator-manual/>

#### FIRE ALARM EXAMINATION CONTENT OUTLINE

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 3 hours to complete this examination. **NOTE:** All Fire Alarm Contractor candidates are required to pass the Alarm Code of Laws Examination and the Fire Alarm Examination.

1. General Electrical Knowledge (15 Items)
2. Low - Voltage (15 Items)
3. Fire Detection and Alarm Systems (20 Items)

#### Fire Alarm Reference Books

1. *NFPA 70 National Electrical Code or National Electrical Code Handbook*, 2014 edition, National Fire Protection Association, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
2. *NFPA 72 - National Fire Alarm Code*, 2013, National Fire Protection Association, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
3. *Fire Alarm Signaling Systems Handbook*, 2003, 3rd Edition, Bukowski & O'Laughlin, National Fire Protection Association, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)

#### GENERAL ROOFING EXAMINATION CONTENT OUTLINE

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 3 hours to complete this examination. **NOTE:** All General Roofing - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the General Roofing Examination.

1. Roofing - Substrate (5 Items)
2. Roofing - Steep (27 Items)
3. Roofing - Repairs (9 Items)
4. Roofing - Low Slope (3 Items)
5. Safety (6 Items)

#### General Roofing Reference Books

1. *South Carolina International Building Code-OR-International Building Code*, 2015 edition, International Code Council, 800-786-4452, [shop.iccsafe.org](http://shop.iccsafe.org)



2. **Roofing Construction and Estimating**, 1995, Daniel Atcheson, Craftsman Book Company, PO Box 6500, Carlsbad, CA 92018
3. **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.psonlinestore.com](http://www.psonlinestore.com) (See order form at the end of the Candidate Information Bulletin.)

#### GLASS AND GLAZING EXAMINATION CONTENT OUTLINE

There are 60 questions in this examination. You will need to answer 42 questions correctly in order to pass. You are allowed 2 hours to complete this examination.

**NOTE:** All Glass & Glazing - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Glass and Glazing Examination.

1. General Glazing (15 items)
2. Glass Systems (13 items)
3. Metal Framing (6 items)
4. Plastics/Acrylics (5 items)
5. Sealant Instructions (4 items)
6. Safety (7 items)
7. Code Requirements (10 items)

#### Glass & Glazing Reference Books

1. **Glass Installer Reference Manual**, 2002 or 2005, National Glass Association, [www.icontractor.net](http://www.icontractor.net)
2. **Guide to Glass & Glazing Requirements of the Model Building Codes**, 2016 or earlier, National Glass Association, (866)-342-5642, Ext. 127, [www.glass.org](http://www.glass.org)
3. **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.psonlinestore.com](http://www.psonlinestore.com) (See order form at the end of the Candidate Information Bulletin.)

#### GRADING EXAMINATION CONTENT OUTLINE

There are 40 questions in this examination. You will need to answer 28 questions correctly in order to pass. You are allowed 2 hours to complete this examination. **NOTE:** All Grading - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Grading Examination.

1. General Knowledge (15 Items)
2. Excavating and Grading (20 Items)
3. Safety - Code of Federal Regulations (5 Items)

#### Grading Reference Books

1. **Standard Specifications for Highway Construction**, 2007, South Carolina Department of Highways & Public Transportation, PO Box 191, Columbia, SC 29202, (803) 737-4533). Available online (only): [http://www.scdot.org/doing/doingPDFs/2007\\_full\\_specbook.pdf](http://www.scdot.org/doing/doingPDFs/2007_full_specbook.pdf) **OR** **Standard Specifications for Highway Construction Selections as of 2007 by PSI**, (800) 733-9267. (See order form at the end of this bulletin.)
2. **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.psonlinestore.com](http://www.psonlinestore.com) (See order form at the end of the Candidate Information Bulletin.)
3. **Excavation and Grading Handbook**, 2006, Craftsman Book Company, PO Box 6500, Carlsbad, CA 92018
4. **Construction Planning, Equipment, and Methods**, 8<sup>th</sup> Edition, R.L. Peurifoy, McGraw-Hill Publishing, Inc., PO Box 545, Blacklick, OH 43004-0545
5. **South Carolina 811 Excavator Manual**, latest edition, <https://sc811.com/excavator-manual/>

#### HEATING EXAMINATION CONTENT OUTLINE

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 3 hours to complete this examination. **NOTE:** All Heating - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Heating Examination.

1. Code Compliance (8 Items)
2. HARV General (4 Items)
3. HARV Controls (4 Items)
4. HARV Load Calculation (7 Items)
5. Fuel Gas Systems (6 Items)
6. Piping (6 Items)
7. Ducts (3 Items)
8. Boilers - Low Pressure (7 Items)
9. Boilers - High Pressure (5 Items)

#### Heating Reference Books

1. **South Carolina International Mechanical Code-OR- International Mechanical Code**, 2015 edition, International Code Council, 800-786-4452, [shop.iccsafe.org](http://shop.iccsafe.org)
2. **South Carolina International Fuel Gas Code -OR- International Fuel Gas Code**, 2015 edition, International Code Council, 800-786-4452, [shop.iccsafe.org](http://shop.iccsafe.org)



3. **Trane Ductulator**, TRANE Company, 8929 Western Way, Suite 1, Jacksonville, FL 32256
4. **ACCA Ductulator**, Air Conditioning Contractors of America, 1712 New Hampshire Avenue N.W., Washington, DC 20009
5. **Low Pressure Boilers**, Frederick M. Steingress, Daryl R. Walker, 4th Edition, 2013, American Technical Publishers, Inc., (800) 323-3471, [www.atpllearning.com](http://www.atpllearning.com)
6. **High Pressure Boilers**, 5th Edition, 2012, Frederick M. Steingress & Harold J. Frost, American Technical Publishers, Inc., (800) 323-3471, [www.atpllearning.com](http://www.atpllearning.com)
7. **Manual N - Commercial Load Calculation for Small Commercial Buildings**, 5th Edition, 2008, Air Conditioning Contractors of America (ACCA), (703) 575-4477, [www.acca.org](http://www.acca.org)
8. **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)
9. **System Design Manual - Part III: Piping Design, Carrier**, 1960, Carrier Air Conditioning Company, Carrier Parkway, Literature Distribution, Bldg. 8, PO Box 4808, Syracuse, NY 13221
10. **Pipefitter's Handbook**, 1967, 3rd Edition, Forest R. Linsey, Industrial Press, Inc., 200 Madison Avenue, New York, NY 10016
11. **Modern Refrigeration and Air Conditioning**, 19<sup>th</sup> or 20<sup>th</sup> edition, Goodheart-Wilcox Company, [www.g-w.com](http://www.g-w.com)
  - 11.1 **Refrigeration and Air Conditioning Technology**, 6th edition, 2009, Whitman/Johnson/Tomczyk/Silberstein, Cengage Learning, [www.cengage.com](http://www.cengage.com)
  - 11.2 **Trane Air Conditioning Manual**, 1996, TRANE Company, 8929 Western Way, Suite 1, Jacksonville, FL 32256
  - 11.3 **ASHRAE Handbook of Fundamentals**, 1997 American Society of Heating, Refrigeration, and Air Conditioning Engineers, 1791 Tullie Circle, Atlanta, GA 30329

#### LIGHTNING PROTECTION EXAMINATION CONTENT OUTLINE

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 3 hours to complete this examination. **NOTE:** All Lightning Protection - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Lightning Protection Examination.

1. NFPA 780 (28 Items)
2. General Theory (11 Items)
3. NEC (11 Items)

#### Lightning Protection Systems Reference Books

1. **NFPA 70 National Electrical Code or National Electrical Code Handbook**, 2014 edition, National Fire Protection Association, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
2. **NFPA 780 - Standard for the Installation of Lightning Protection Systems**, 1997, National Fire Protection Association, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
3. **South Carolina 811 Excavator Manual**, latest edition, <https://sc811.com/excavator-manual/>

#### MARINE EXAMINATION CONTENT OUTLINE

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 3 hours to complete this examination. **NOTE:** All Marine - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Marine Examination.

1. Safety - Marine (6 Items)
2. Miscellaneous Engineering - Pile Driving (25 Items)
3. Concrete (15 Items)
4. Concrete - Reinforcing Steel (4 Items)

#### Marine Reference Books

1. **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.)
2. **Construction Planning, Equipment, and Methods**, 8<sup>th</sup> Edition, R.L. Peurifoy, McGraw-Hill Publishing, Inc., PO Box 545, Blacklick, OH 43004-0545
3. **Design and Control of Concrete Mixtures**, 15<sup>th</sup> Edition, 2011, S.H. Kosmatka and W.C. Panarese, Portland Cement Association, 5420 Old Orchard Road, Skokie, IL 60077-1083, 847-966-6200, [www.portcem.org](http://www.portcem.org)
4. **Placing Reinforcing Bars, Recommended Practices**, 9th Edition, 2011, Concrete Reinforcing Steel Institute, (800) 328-6306, [www.crsi.org](http://www.crsi.org)
5. **South Carolina 811 Excavator Manual**, latest edition, <https://sc811.com/excavator-manual/>

#### PLUMBER EXAMINATION CONTENT OUTLINE

There are 80 questions in this examination. You will need to answer 56 questions correctly in order to pass. You are allowed 4 hours to complete this examination. **NOTE:** All Plumber - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Plumber Examination.

1. ADA Accessibility (1 Items)
2. General Plumbing Knowledge (6 Items)
3. General Plumbing Regulations (3 Items)





4. Hangers and Supports (General) (2 Items)
5. Materials (2 Items)
6. Joints and Connections (3 Items)
7. Fixtures and Equipment (3 Items)
8. Water Heaters (4 Items)
9. Water Supply and Distribution (3 Items)
10. Backflow Prevention (1 Item)
11. Sanitary Drainage Systems (4 Items)
12. Cleanouts (2 Items)
13. Indirect and Special Waste (2 Items)
14. Sanitary Venting (6 Items)
15. Traps and Interceptors (3 Items)
16. Storm Piping Systems (2 Item)
17. Plumbing - Developed Length (5 Items)
18. DWV Isometric Analysis (Isometric Based) (10 Items)
19. Water Supply Isometric Analysis (4 Items)
20. Roof Drain Isometric Analysis (3 Items)
21. Pipe Assembly (1 Item)
22. Valves (1 Item)
23. General Fuel Knowledge (3 Items)
24. Natural Gas (3 Items)
25. LP - Gas (3 Items)

#### Plumber Reference Books

1. *South Carolina International Plumbing Code-OR-International Plumbing Code*, 2015 edition, International Code Council, 800-786-4452, [shop.iccsafe.org](http://shop.iccsafe.org)
2. *South Carolina International Fuel Gas Code -OR-International Fuel Gas Code*, 2015 edition, International Code Council, 800-786-4452, [shop.iccsafe.org](http://shop.iccsafe.org)
3. *Mathematics for Plumbers and Pipefitters*, Lee Smith, 8th Edition, 2013, [www.cengage.com](http://www.cengage.com)
4. *South Carolina 811 Excavator Manual*, latest edition, <https://sc811.com/excavator-manual/>

#### PACKAGED EQUIPMENT EXAMINATION CONTENT OUTLINE

There are 80 questions in this examination. You will need to answer 56 questions correctly in order to pass. You are allowed 4 hours to complete this examination. **NOTE:** All Package Equipment - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Package Equipment Examination.

1. General Piping (1 Item)
2. General Tubing (1 Item)
3. Pipe Assembly (1 Item)
4. Piping Systems (2 Items)
5. Drain Piping (1 Item)
6. Valves (1 Item)

7. Piping Insulation (1 Item)
8. Hangers and Supports (General) (1 Item)
9. Mechanical Sound, Vibration, and Seismic Control (1 Item)
10. Heating and Cooling Principles (2 Items)
11. Refrigerants (1 Item)
12. Load Calculations (8 Items)
13. Heating and Cooling Equipment (1 Item)
14. Testing, Adjusting, and Balancing (TAB) (2 Items)
15. HVACR Control Fundamentals (1 Item)
16. Control Schematics and Wiring Diagrams (1 Item)
17. HVACR Control Systems (1 Item)
18. Machine Room (1 Item)
19. Air Conditioning Systems (6 Items)
20. Heat Pumps (5 Items)
21. Furnaces (Warm Air Heating Equipment) (2 Items)
22. Chimneys, Flues, Vents, and Vent Connectors (3 Items)
23. Combustion Air (2 Items)
24. General Fuel Knowledge (1 Item)
25. Natural Gas (1 Item)
26. General Duct Systems Knowledge and Principles (4 Items)
27. Duct Conversion/Equivalencies (4 Items)
28. Mechanical Sheet Metal Devices/Systems (2 Items)
29. Duct System Components (5 Items)
30. Metal Ducts (3 Items)
31. Fiberglass Ducts (1 Item)
32. Filtering Systems (1 Item)
33. Ventilation Equipment and Devices (2 Items)
34. Exhaust Systems (2 Items)
35. General Electrical Knowledge (2 Items)
36. Requirements for Electrical Installations (1 Item)
37. Electrical/Electronic Fundamentals (1 Item)
38. Safety (2 Items)
39. Fire Rated Construction (1 Item)
40. General Plan Reading (1 Item)

#### Packaged Equipment Reference Books

1. *South Carolina International Mechanical Code -OR-International Mechanical Code*, 2015 edition, International Code Council, 800-786-4452, [shop.iccsafe.org](http://shop.iccsafe.org)
2. *South Carolina International Fuel Gas Code -OR-International Fuel Gas Code*, 2015 edition, International Code Council, 800-786-4452, [shop.iccsafe.org](http://shop.iccsafe.org)
3. *ACCA Ductulator*, Air Conditioning Contractors of America, 1712 New Hampshire Avenue N.W., Washington, DC 20009
  - 3.1. *Trane Ductulator*, TRANE Company, 8929 Western Way, Suite 1, Jacksonville, FL 32256



4. **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.)

5. **Manual N - Commercial Load Calculation for Small Commercial Buildings**, 5th Edition, 2008, Air Conditioning Contractors of America (ACCA), (703) 575-4477, [www.acca.org](http://www.acca.org)

6. **Manual D - Residential Duct Systems**, 3<sup>rd</sup> Edition, 2009, Air Conditioning Contractors of America, 1712 New Hampshire Avenue N.W., Washington, DC 20009

7. **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)

8. **Pipefitter's Handbook**, 1967, 3<sup>rd</sup> Edition, Forest R. Lindsey, Industrial Press, Inc., 200 Madison Avenue, New York, NY 10016

9. **Refrigeration and Air Conditioning Technology**, 6th edition, 2009, Whitman/Johnson/Tomczyk/Silberstein, Cengage Learning, [www.cengage.com](http://www.cengage.com)

9.1. **Modern Refrigeration and Air Conditioning**, 10<sup>th</sup> or 20<sup>th</sup> edition, Goodheart-Wilcox Company, [www.g-w.com](http://www.g-w.com)

9.2. **Trane Air Conditioning Manual**, 1996, TRANE Company, 8929 Western Way, Suite 1, Jacksonville, FL 32256

9.3. **ASHRAE Handbook of Fundamentals**, 1997 American Society of Heating, Refrigeration, and Air Conditioning Engineers, 1791 Tullie Circle, Atlanta, GA 30329

#### PIPELINES EXAMINATION CONTENT OUTLINE

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 3 hours to complete this examination. **NOTE:** All Pipelines - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Pipelines Examination.

1. Code Compliance (10 Items)
2. Piping (28 Items)
3. Welding (6 Items)
4. Safety (6 Items)

#### Pipelines Reference Books

1. **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), [www.psiexams.com](http://www.psiexams.com) (See order form at the end of the Candidate Information Bulletin.)

2. **NFPA 30 - Flammable and Combustible Liquids Code**, 2015 or earlier, National Fire Protection Association, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
3. **ASME B31.8 - Gas Transmission and Distribution Piping Systems**, 2014 or earlier, American Society of Mechanical Engineers, [contractorcampus.com/r44.html](http://contractorcampus.com/r44.html) or [www.asme.org](http://www.asme.org)
4. **Pipefitter's Handbook**, 1967, 3<sup>rd</sup> Edition, Forest R. Lindsey, Industrial Press, Inc., 200 Madison Avenue, New York, NY 10016
5. **Pipe Welding Procedures**, 1973, H. Rampaul, Industrial Press, Inc., 200 Madison Avenue, New York, NY 10016
6. **South Carolina 811 Excavator Manual**, latest edition, <https://sc811.com/excavator-manual/>

#### PRE-ENGINEERED METAL BUILDINGS EXAMINATION CONTENT OUTLINE

There are 40 questions in this examination. You will need to answer 28 questions correctly in order to pass. You are allowed 3 hours to complete this examination. **NOTE:** All Pre-Engineered Metal Buildings - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Pre-Engineered Metal Buildings Examination.

1. Sitework (3 Items)
2. Concrete (4 Items)
3. Concrete - Framework (4 Items)
4. Concrete - Reinforcement (4 Items)
5. Masonry - (4 Items)
6. Metal - Structural Framing (10 Items)
7. Insulation (3 Items)
8. Metal - Siding and Roofing (4 Items)
9. Safety (4 Items)

#### Pre-Engineered Metal Buildings Reference Books

1. **South Carolina International Building Code -OR- International Building Code**, 2015 edition, International Code Council, 800-786-4452, [shop.iccsafe.org](http://shop.iccsafe.org)
2. **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.)
3. **Metal Building Systems Manual**, 2012, Metal Building Manufacturers Association, 1300 Summer Ave, Cleveland OH 44115, [www.mbma.com](http://www.mbma.com)



4. **ASTM C 754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products**, 2011, American Society for Testing & Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959
5. **ASTM C 1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories**, 2011, American Society for Testing & Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959
6. **The Contractor's Guide to Quality Concrete Construction**, 2005, 3rd Edition, American Concrete Institute, (248) 848-3700, [www.concrete.org](http://www.concrete.org)
7. **Energy Design Guidelines for Metal Building Systems**, 2010, Metal Building Manufacturers Association, 1300 Summer Ave, Cleveland OH 44115, [www.mbma.com](http://www.mbma.com)
8. **Specifications for Structural Joints Using High-Strength Bolts; Research Council on Structural Connections**, 2009  
<http://www.boltcouncil.org/files/2009RCSCSpecification.pdf>
9. **South Carolina 811 Excavator Manual**, latest edition, <https://sc811.com/excavator-manual/>

4. **Facility Piping Systems Handbook**, 2010, [www.mcgraw-hill.com](http://www.mcgraw-hill.com).
5. **Modern Welding**, 11<sup>th</sup> Edition, 2013, Althouse, Turnquist, Bowditch, Bowditch, The Goodheart-Willcox Company, Inc., 18604 West Creek Dr., Tinley Park, IL 60477-6243, 1-800-323-0440, [www.goodheartwillcox.com](http://www.goodheartwillcox.com)
6. **Pipefitters Handbook**, 1967, Forrest R. Lindsey, Industrial Press 200 Madison Avenue, New York, NY 10016 8885287852 <http://www.industrialpress.com/>
7. **Code of Federal Regulations - 29 CFR Part 1926 (OSHA)**, with latest available amendments, U.S. Government Printing Office, (866) 512-1800  
[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).
6. **South Carolina 811 Excavator Manual**, latest edition, <https://sc811.com/excavator-manual/>

#### PRESSURE AND PROCESS PIPING EXAMINATION CONTENT OUTLINE

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 2 hours to complete this examination. **NOTE:** All Pressure & Process Piping - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Pressure & Process Piping Examination.

1. Joining Methods (10 Items)
2. Pipe Fitting (7 Items)
3. Safety (7 Items)
4. Reading Drawings (2 Items)
5. Codes (5 Items)
6. Materials and Components (8 Items)
7. Process Equipment (4 Items)
8. Insulation (2 Items)
9. Pipe Supports (3 Items)
10. Line Labeling (2 Items)

##### Pressure and Process Piping Reference Books

1. **ASME A13.1: Scheme for the Identification of Piping Systems**, 2007, American Society of Mechanical Engineers Three Park Avenue, New York, NY 10065 (800) 843-2763 [www.asme.org](http://www.asme.org)
2. **ASME B31.1-2001 Power Piping, ASME Code for Pressure Piping**, 2001, American Society of Mechanical Engineers Three Park Avenue, New York, NY 10065 (800) 843-2763 [www.asme.org](http://www.asme.org)
3. **ASME B31.3-2002 Process Piping**, 2002, ASME American Society of Mechanical Engineers Three Park Avenue, New York, NY 10065 (800) 843-2763 [www.asme.org](http://www.asme.org)

#### PUBLIC ELECTRICAL UTILITY EXAMINATION CONTENT OUTLINE

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 3 hours to complete this examination. **NOTE:** All Public Electrical Utility - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Public Electrical Utility Examination.

The holder of this license may perform only work limited to line construction, including distribution systems, and their allied work, for public and private companies; installation, maintenance repair of all high voltage cable splicing and pulling wire for all systems in excess of 2,400 volts; traffic signal and highway lighting installation, maintenance and repair.

1. Transformers (6 Items)
2. Electrical Knowledge (5 Items)
3. Conductors (5 Items)
4. Overhead Lines (7 Items)
5. Underground Lines (4 Items)
6. Equipment and Safety (8 Items)
7. Grounding Methods (3 Items)
8. Service Drops and Laterals (4 Items)
9. Poles and Structures (4 Items)
10. Electric Supply Stations (4 Items)

##### Public Electrical Utility Electrical Reference Books

1. **National Electrical Safety Code (C2-1997)**, Institute of Electrical Electronics Engineers, Inc., 345 East 47th Street, New York, NY 10017-2394



2. **NFPA 70 National Electrical Code or National Electrical Code Handbook**, 2014 edition, National Fire Protection Association, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
3. **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).
4. **Lineman's and Cableman's Handbook**, Shoemaker and Mack, 12<sup>th</sup> or 14<sup>th</sup> editions, [www.amazon.com](http://www.amazon.com).
5. **American Electricians' Handbook**, Croft, Hartwell, and Summers, 16th Edition, 2013, McGraw-Hill, (800) 262-4729, [shop.mcgraw-hill.com](http://shop.mcgraw-hill.com)
6. **South Carolina 811 Excavator Manual**, latest edition, <https://sc811.com/excavator-manual/>

#### REFRIGERATION EXAMINATION CONTENT OUTLINE

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 3 hours to complete this examination. **NOTE:** All Refrigeration - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Refrigeration Examination.

1. Code Compliance (7 Items)
2. HARV General (11 Items)
3. HARV Maintenance (8 Items)
4. HARV Controls (8 Items)
5. Piping - General (3 Items)
6. Piping - Dimensioning and Design (9 Items)
7. Safety (4 Items)

#### Refrigeration Reference Books

1. **South Carolina International Mechanical Code -OR- International Mechanical Code**, 2015 edition, International Code Council, 800-786-4452, [shop.iccsafe.org](http://shop.iccsafe.org)
2. **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).
3. **Pipefitter's Handbook**, 1967, 3rd Edition, Forest R. Linsey, Industrial Press, Inc., 200 Madison Avenue, New York, NY 10016
4. **System Design Manual - Part III: Piping Design, Carrier**, 1960, Carrier Air Conditioning Company, Carrier Parkway,

- Literature Distribution, Bldg. 8, PO Box 4808, Syracuse, NY 13221
5. **Modern Refrigeration and Air Conditioning**, 19<sup>th</sup> or 20<sup>th</sup> edition, Goodheart-Wilcox Company, [www.g-w.com](http://www.g-w.com)
    - 5.1. **Refrigeration and Air Conditioning Technology**, 6th edition, 2009, Whitman/Johnson/Tomczyk/Silberstein, Cengage Learning, [www.cengage.com](http://www.cengage.com)
    - 5.2. **Trane Air Conditioning Manual**, 1996, TRANE Company, 8929 Western Way, Suite 1, Jacksonville, FL 32256
    - 5.3. **ASHRAE Handbook of Fundamentals**, 1997 American Society of Heating, Refrigeration, and Air Conditioning Engineers, 1791 Tullie Circle, Atlanta, GA 30329
  6. **South Carolina 811 Excavator Manual**, latest edition, <https://sc811.com/excavator-manual/>

#### SPECIALTY ROOFING EXAMINATION CONTENT OUTLINE

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 3 hours to complete this examination. **NOTE:** All Specialty Roofing - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Specialty Roofing Examination.

1. Safety (5 Items)
2. Roofing - Substrate (8 Items)
3. Roofing - Steep (19 Items)
4. Roofing Repairs (4 Items)
5. Roofing - Elastomeric (7 Items)
6. Roofing - Built - up Bituminous (7 Items)

#### Specialty Roofing Reference Books

1. **South Carolina International Building Code -OR- International Building Code**, 2015 edition, International Code Council, 800-786-4452, [shop.iccsafe.org](http://shop.iccsafe.org)
2. **NRCA Roofing Manual: Steep Slope Roof Systems**, 2017, The National Roofing Contractors Association, (847) 299-9070, [www.nrca.net](http://www.nrca.net)
3. **NRCA Roofing Manual: Metal Panel and SPF Roof Systems**, 2016, The National Roofing Contractors Association, (847) 299-9070, [www.nrca.net](http://www.nrca.net)
4. **NRCA Roofing Manual: Membrane Roofing Systems**, 2015, The National Roofing Contractors Association, (847) 299-9070, [www.nrca.net](http://www.nrca.net)
5. **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).



## STRUCTURAL FRAMING EXAMINATION CONTENT OUTLINE

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 2 hours to complete this examination. **NOTE:** All Structural Framing - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Structural Framing Examination.

1. Safety (4 Items)
2. Welding (12 Items)
3. Structural Steel - Bolting (4 Items)
4. Metal - Joists (13 Items)
5. Rigging (8 Items)
6. Structural Steel (9 Items)

### Structural Framing Reference Books

1. **South Carolina International Building Code -OR- International Building Code**, 2015 edition, International Code Council, 800-786-4452, [shop.iccsafe.org](http://shop.iccsafe.org)
2. **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.psonlinestore.com](http://www.psonlinestore.com) (See order form at the end of the Candidate Information Bulletin).
3. **Technical Digest No. 9 - Handling and Erection of Steel Joists and Joist Girders**, 3rd Edition, 2008, Steel Joint Institute, 234 W. Cheves Street, Florence, SC 29501, Phone: (843) 407-4091, Fax (843) 407-4044, [www.steeljoist.org](http://www.steeljoist.org).
4. **Code of Standard Practice for Steel Buildings and Bridges**, 2000, American Institute of Steel Construction, PO Box 806276, Attn: Publication Department, Chicago, IL 60680-4124
5. **Modern Welding**, 11<sup>th</sup> Edition, 2013, Althouse, Turnquist, Bowditch & Bowditch, Goodheart-Wilcox Company, Inc., 18604 W. Creek Drive, Tinley Park, IL 60477-6243
6. **Manual of Steel Construction**, 1989, 9<sup>th</sup> Edition, American Institute of Steel Construction, PO Box 806276, Attn: publication Department, Chicago, IL 60680-41

## SWIMMING POOL EXAMINATION CONTENT OUTLINE

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 3 hours to complete this examination. **NOTE:** All Swimming Pool - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Swimming Pool Examination.

1. Pool - Electrical (6 Items)
2. Shotcrete (8 Items)
3. Concrete (6 Items)

4. Concrete - Reinforcing Steel (6 Items)
5. Pool - Care and Operation (12 Items)
6. Regulation 61-51: Swimming pools (8 Items)
7. Pool - Estimating (4 Items)

### Swimming Pool Reference Books

1. **Guide to Shotcrete - ACI 506/R-90**, 1995, American Concrete Institute, 38800 International Way/Country Club Drive, PO Box 9094, Farmington Hills, MI 48333
2. **Design and Control of Concrete Mixtures**, 15<sup>th</sup> Edition, 2011, S.H. Kosmatka and W.C. Panarese, Portland Cement Association, 5420 Old Orchard Road, Skokie, IL 60077-1083, 847-966-6200, [www.portcem.org](http://www.portcem.org)
3. **Placing Reinforcing Bars, Recommended Practices**, 9th Edition, 2011, Concrete Reinforcing Steel Institute, (800) 328-6306, [www.crsi.org](http://www.crsi.org)
4. **Article 680, National Electrical Code: Swimming Pool Wiring**, 2005, National Fire Protection Association, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)
5. **Certified Pool-Spa Operators Handbook**, 2006, National Swimming Pool Foundation, 10803 Gulfdale Suite 300, San Antonio, TX 78216, (516) 623-3447, [www.nspf.com](http://www.nspf.com)
6. **Public Swimming Pools, Regulation 61-51**, 2003, South Carolina Department of Health, South Carolina Department of Health and Environmental Control, Bureau of Drinking Water, 2600 Bull Street, Columbia, SC 29201
7. **NFPA 70 National Electrical Code or National Electrical Code Handbook**, 2014 edition, National Fire Protection Association, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org). (The examination covers only Article 680)
8. **South Carolina 811 Excavator Manual**, latest edition, <https://sc811.com/excavator-manual/>

## WATER AND SEWER LINES EXAMINATION CONTENT OUTLINE

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass.

You are allowed 3 hours to complete this examination. **NOTE:** All Water & Sewer - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Water and Sewer Examination.

1. Safety - Code of Federal Regulations (6 Items)
2. General Knowledge (7 Items)
3. Miscellaneous Engineering - Design Elevations (7 Items)
4. Underground Utilities - Concrete Pipe Installation (12 Items)
5. Underground Utilities - Ductile Pipe Installation (14 Items)
6. Excavating and Grading (4 Items)

### Water and Sewer Lines Reference

1. **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).

2. **DIPRA Installation Guide for Ductile Iron Pipe**, 2007 (revised 2012), Ductile Iron Pipe Research Association, [www.dipra.org](http://www.dipra.org)
3. **Concrete Pipe & Box Culvert**, 2007 Edition, American Concrete Pipe Association, 683 Grigsby Way, Cedar Hill, TX 75104
4. **Excavation and Grading Handbook**, 2006, Craftsman Book Company, PO Box 6500, Carlsbad, CA 92018
5. **South Carolina 811 Excavator Manual**, latest edition, <https://sc811.com/excavator-manual/>

### **WATER AND SEWER PLANTS EXAMINATION CONTENT OUTLINE**

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 3 hours to complete this examination. **NOTE:** All Water and Sewer Plants - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Water and Sewer Plants Examination.

1. Safety - Code of Federal Regulations (4 Items)
2. General Plant Construction (20 Items)
3. Concrete (6 Items)
4. Concrete - Reinforcing Steel (6 Items)
5. Excavating and Grading (8 Items)
6. Miscellaneous Engineering - Design Elevations (6 Items)

#### **Water & Sewer Plants Reference Books**

1. **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.)
2. **Design and Control of Concrete Mixtures**, 15<sup>th</sup> Edition, 2011, S.H. Kosmatka and W.C. Panarese, Portland Cement Association, 5420 Old Orchard Road, Skokie, IL 60077-1083, 847-966-6200, [www.portcem.org](http://www.portcem.org)
3. **Placing Reinforcing Bars, Recommended Practices**, 9th Edition, 2011, Concrete Reinforcing Steel Institute, (800) 328-6306, [www.crsi.org](http://www.crsi.org)
4. **Excavation and Grading Handbook**, 2006, Craftsman Book Company, PO Box 6500, Carlsbad, CA 92018
5. **DIPRA Installation Guide for Ductile Iron Pipe**, 2007 (revised 2012), Ductile Iron Pipe Research Association, [www.dipra.org](http://www.dipra.org)
6. **South Carolina 811 Excavator Manual**, latest edition, <https://sc811.com/excavator-manual/>

### **WOOD FRAME STRUCTURES EXAMINATION CONTENT OUTLINE**

There are 50 questions in this examination. You will need to answer 35 questions correctly in order to pass. You are allowed 3 hours to complete this examination. **NOTE:** All Wood Frame Structures - Commercial Contractor candidates are required to pass the Business Management and Law for Contractors Examination and the Wood Frame Structures Examination.

1. Safety (5 Items)
2. Concrete - Earthwork (7 Items)
3. Concrete (9 Items)
4. Carpentry - Rough (16 Items)
5. Carpentry - Manufactured Trusses (6 Items)
6. Roofing (7 Items)

#### **Wood Frame Structures Reference Books**

1. **South Carolina International Building Code -OR- International Building Code**, 2015 edition, International Code Council, 800-786-4452, [shop.iccsafe.org](http://shop.iccsafe.org)
2. **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 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.)
3. **Carpentry and Building Construction**, 2010 or 2016 (Student Edition), John L. Feirer and Mark D. Feirer, McGraw-Hill, [www.mheducation.com](http://www.mheducation.com)
4. **BCSI: Guide to Good Practice for Handling, Installing, Restraining, and Bracing of Metal Plate Connected Wood Trusses**, 2013 (updated March 2015), Structural Building Components Association and Truss Plate Institute, (608) 274-4849, [www.sbcindustry.com](http://www.sbcindustry.com)
5. **South Carolina 811 Excavator Manual**, latest edition, <https://sc811.com/excavator-manual/>





REGISTRATION FEES ARE NOT REFUNDABLE OR TRANSFERABLE. THE EXAMINATION FEE IS VALID FOR ONE YEAR.

*Please continue on the next page.*

**NOTE:** All Burglar and Fire Alarm Contractor candidates are required to pass the Alarm Code of Laws Examination and the technical alarm exam of the specific license category in which they are applying. All other commercial General and Mechanical Contractor candidates (including General/Mechanical Contractor Code of Laws examination candidates) are required to pass the Business Management and Law for Contractors Examination in addition to any technical exams required for the specific license category or subcategory in which they are applying.

ALL candidates EXCEPT Fire/Burglar Alarm candidates may only take the examination twice within a 12-month period and once every 6 months thereafter.

8. **Total Fees Included:** \$\_\_\_\_\_ Pay by credit card (VISA, MasterCard, American Express or Discover), money order, cashier's check or company check. Personal checks and cash are **not** accepted.

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9. I am submitting the Exam Accommodation Request (at the end of this bulletin) and required documentation.  Yes  No

10. **Affidavit:** I certify that the information provided on this registration form (and/or telephonically to PSI) is correct. I understand that any falsification of information may result in denial of licensure. I have read and understand the examination information bulletin.

**Signature** \_\_\_\_\_ **Date** \_\_\_\_\_

if you are registering by mail or fax, sign and date this registration form on the lines provided.

Complete and forward this registration form with the applicable examination fee to:

PSI Licensure:certification \* ATTN: Examination Registration SC CC

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To speed up your registration processing, please write on the outside of the envelope "ATTENTION: Examination Registration SC CC".

PSI may occasionally share your information with partners who have offers of interest to you. Please check this box if you do not wish PSI to share your information with these parties. Please note: PSI will never release your ID number or SSN number.





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➤ Order online at [www.pSIONlinestore.com](http://www.pSIONlinestore.com)

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<input type="checkbox"/>	29 CFR Part 1926 Selections
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<input type="checkbox"/>	Construction Planning, Equipment, and Methods
<input type="checkbox"/>	American Electricians' Handbook
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<input type="checkbox"/>	Excavation & Grading Handbook Revised
<input type="checkbox"/>	Roofing Construction & Estimating
<input type="checkbox"/>	Modern Masonry - Brick, Block, Stone
<input type="checkbox"/>	Pipe & Excavation Contracting
<input type="checkbox"/>	Design and Control of Concrete Mixtures, 15th Edition
<input type="checkbox"/>	Diseño y Control de Mezclas de Concreto
<input type="checkbox"/>	Modern Welding
<input type="checkbox"/>	Lineman's and Cableman's Handbook

*Please note: Inventory and pricing subject to change without notice.*



## EXAM ACCOMMODATIONS REQUEST FORM INSTRUCTIONS

All examination centers are equipped to provide access in accordance with the Americans with Disabilities Act (ADA) of 1990.

Applicants with disabilities or those who would otherwise have difficulty taking the examination should request for alternative arrangements by [Clicking Here](#).

### Requirements for exam accommodation requests:

You are required to submit documentation from the medical authority or learning institution that rendered a diagnosis. Verification must be uploaded to PSI on the letterhead stationery of the authority or specialist and include the following:

- Description of the disability and limitations related to testing
- Recommended accommodation/modification
- Name, title and telephone number of the medical authority or specialist
- Original signature of the medical authority or specialist

**MAKE SURE YOU ARE ELIGIBLE FOR THE EXAMINATION BEFORE  
REQUESTING EXAMINATION ACCOMMODATIONS**

PSI  
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