



Professional Licensing Boards

**Georgia Construction
Industry Licensing Board**
Division of Low Voltage Contractors

Licensure Examinations

***Candidate
Information
Bulletin***

July
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Examination Development and Testing Unit



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The Professional Licensing Boards do not discriminate among candidates on the basis of age, gender, race, religion or national origin. The Professional Licensing Boards also do not discriminate among mentally or physically challenged candidates.

The Examination Development and Testing Unit gratefully acknowledges the assistance of other state licensing programs in the development of this candidate information bulletin. Portions of this bulletin were based on candidate information bulletins of other states.



Introduction

The Division of Low Voltage Contractors of the Georgia Construction Industry Licensing Board was created by the Georgia legislature to protect the public by taking steps to ensure that licensed Low Voltage Contractors are competent in their profession. To achieve this goal, minimum standards and requirements were established by the Board for entry into the profession. Passing of a licensing examination is one of the requirements for obtaining a Low Voltage Contractors license.

Please review this bulletin carefully. It provides you with information you need about the low voltage examinations.

Examination Administration

Examinations are delivered by computer at AMP Assessment Centers located throughout Georgia and in Jacksonville, FL, Tallahassee, FL and Chattanooga, TN. For application deadlines, please see the application posted online at www.goAMP.com. The examinations are administered by appointment only Monday through Saturday at 9:00 a.m. and 1:30 p.m. Available dates will be indicated when scheduling your examination. Candidates are scheduled on a first-come, first-served basis.

A current listing of AMP Assessment Centers, including addresses and driving directions, may be viewed at AMP's website located at www.goAMP.com. Specific address information will be provided when a candidate schedules an examination appointment.

■ Veterans' Preference Points

Georgia law [General Provisions Volume 30, Title 43-1-9.(1)(2)(3)] provides that veterans meeting certain conditions are eligible for the addition of five to ten points to their examination scores. If you have served on active duty in the Armed Forces, the Reserves or the National Guard during wartime or during any conflict when military personnel were committed by the President, you may be eligible for Veterans' Preference Points to be added to your examination scores. The law provides that you may also qualify for veterans' preference points if you were discharged for injury or illness incurred in the line of duty and your disability is officially rated. To apply for veterans' preference points, submit a copy of your DD 214 form to Exam Development and Testing Unit, Professional Licensing Board Division, 237 Coliseum Drive, Macon, GA 31217-3858.



Applying and Scheduling an Examination

■ Applying for an Examination

You may submit an application online by visiting www.goAMP.com.

Or

Complete and submit to AMP the paper application available online at www.goAMP.com with appropriate fee (company check, cashier's check or money order).

A paper application is considered complete only if all information requested is complete, legible and accurate; if you are eligible for the examination; and if the appropriate fee accompanies the application.

The application must be received by the deadline indicated. AMP will mail/email confirmation of receipt of applications within two weeks. If your application is approved by the Board, AMP will mail/email a notice with instructions for scheduling an examination appointment.

If confirmation of receipt is not received 15 business days from the date the application is submitted, contact AMP toll-free at 800-345-6559.

■ Scheduling an Examination Appointment

After receiving application approval, you may schedule online at www.goAMP.com or by phone at 800-345-6559. This toll-free number is answered from 7:00 a.m. to 9:00 p.m. (Central Time) Monday through Thursday, 7:00 a.m. to 7:00 p.m. on Friday and 8:30 a.m. to 5:00 p.m. on Saturday.

If you contact AMP by 3:00 p.m. Central Time on...	Depending on availability, your examination may be scheduled as early as...
Monday	Wednesday
Tuesday	Thursday
Wednesday	Friday/Saturday
Thursday	Monday
Friday	Tuesday

Persons who have a disability and may require accommodations should contact the Board office at 478-207-1419 to obtain the 'Request for Disability Guidelines' form.

If special accommodations are being requested, please contact AMP at 800-345-6559 to schedule an appointment.

■ Rescheduling or Canceling an Examination

Fees are nonrefundable. You may reschedule an examination once at no charge by going online to www.goAMP.com or by calling AMP at 800-345-6559 at least 2 business days prior to a scheduled computer administration. The following schedule applies:

If the examination is scheduled on...	AMP must be contacted by 3:00 p.m. Central Time to reschedule the examination by the previous...
Monday	Wednesday
Tuesday	Thursday
Wednesday	Friday
Thursday	Monday
Friday	Tuesday

- If you wish to reschedule a second time, appear more than 15 minutes late for an examination, or fail to report for the scheduled examination, you may reapply for the examination. A new, complete application and examination fee are required to reapply for examination.
- If you cancel your examination after your application is submitted, you will forfeit the application and all fees paid to take the examination. A new, complete application and examination fee are required to reapply for the examination.

■ Special Accommodations for Candidates with Disabilities

AMP complies with the Americans with Disabilities Act and strive to ensure that no individual with a disability is deprived of the opportunity to take the examination solely by reason of that disability.

AMP recognizes that at times a candidate may request special testing accommodations. AMP makes every attempt to address requests for testing accommodations based upon review of documented health needs. In all cases, requests for special accommodations and documentation of disability needs are required at the time of application. Contact the Board at 478-207-1419 to obtain the "Request for Disability Guidelines" form.

Wheelchair access is available at all AMP Assessment Centers.



■ Telecommunication Devices for the Deaf

AMP is equipped with Telecommunication Devices for the Deaf (TDD) to assist deaf and hearing-impaired candidates. TDD calling is available 8:30 a.m. to 5:00 p.m. (Central Time) Monday-Friday at 913-895-4637. This TDD phone option is for individuals equipped with compatible TDD machinery.

On the Day of Your Examination

On the day of your examination appointment, report to the Assessment Center no later than your scheduled testing time. Once you enter the office, look for the signs indicating AMP Assessment Center check-in. IF YOU ARRIVE MORE THAN 15 MINUTES AFTER THE SCHEDULED TESTING TIME, YOU WILL NOT BE ADMITTED.

■ Identification

To gain admission to the assessment center, you must present two forms of identification. The primary form must be government issued, current and include your name, signature and photograph. Temporary ID is not accepted. You will also be required to sign a roster for verification of identity.

- Examples of valid primary forms of identification are: driver's license with photograph; state identification card with photograph; passport; military identification card with photograph.
- The secondary form of identification must display your name and signature for signature verification (e.g., credit card with signature, social security card with signature, employment/student ID card with signature).
- If your name on your registration is different than it appears on your identification, you must bring proof of your name change (e.g., marriage license, divorce decree or court order).

■ Security

AMP and the Georgia Construction Industry Licensing Board maintain examination administration and security standards that are designed to ensure all candidates are provided the same opportunity to demonstrate their abilities. The Assessment Center is continuously monitored by audio and video surveillance equipment for security purposes.

The following security procedures apply during the examination:

- Examinations are proprietary. No cameras, notes, tape recorders, Personal Digital Assistants (PDAs), pagers or cellular/smart phones are allowed in the testing room. Possession of a cellular/smart phone or other electronic devices is strictly prohibited and will result in dismissal from the examination.
- Only silent, non-programmable calculators without alpha keys or printing capabilities are allowed in the testing room.
- No guests, visitors or family members are allowed in the testing room or reception areas.

■ Personal Belongings

No personal items, valuables or weapons should be brought to the Assessment Center. Only wallets and keys are permitted. Large coats and jackets must be left outside the testing room. You will be provided a soft locker to store your wallet and/or keys with you in the testing room. You will not have access to these items until after the examination is completed. Please note the following items will not be allowed in the testing room except securely locked in the soft locker.

- watches
- hats
- wallets
- keys

Once you have placed your personal belongings into the soft locker, you will be asked to pull out your pockets to ensure they are empty. If you bring personal items that will not fit in the soft locker, you will not be able to test. The site will not store or be responsible for your personal belongings.

If any personal items are observed or heard (cellular/smart phones, alarms) in the testing room after the examination is started, you will be dismissed and the administration will be forfeited.



■ Examination Restrictions

- Pencils will be provided during check-in.
- You will be provided with one piece of scratch paper at a time to use during the examination, unless noted on the sign-in roster for a particular candidate. You must return the scratch paper to the supervisor at the completion of testing, or you will not receive your score report.
- No documents or notes of any kind may be removed from the Assessment Center.
- No questions concerning the content of the examination may be asked during the examination.
- Eating, drinking or smoking will not be permitted in the Assessment Center.
- You may take a break whenever you wish, but you will not be allowed additional time to make up for time lost during breaks.

■ Misconduct

If you engage in any of the following conduct during the examination you may be dismissed, your scores will not be reported and examination fees will not be refunded.

Examples of misconduct are when you:

- create a disturbance, are abusive, or otherwise uncooperative;
- display and/or use electronic communications equipment such as pagers, cellular/smart phones, PDAs;
- talk or participate in conversation with other examination candidates;
- give or receive help or are suspected of doing so;
- leave the Assessment Center during the administration;
- attempt to record examination questions or make notes;
- attempt to take the examination for someone else;
- are observed with personal belongings, or
- are observed with notes, books or other aids without it being noted on the roster.

■ Copyrighted Examination Questions

All examination questions are the copyrighted property of AMP and the Examination Development and Testing Unit (EDTU) of the State Examining Boards. It is forbidden under federal copyright law to copy, reproduce, record, distribute or display these examination questions by any means, in whole or in part. Doing so may subject you to severe civil and criminal penalties.

■ Failing to Report for an Examination

If you fail to report for an examination, you will forfeit the registration and all fees paid to take the examination. A new, complete application and fee are required.

■ Dressing for the Examination

Dress comfortably. Individuals have different temperature preferences and it is not possible for us to please everyone. We recommend that you bring a sweater or jacket so that you can be comfortable in different conditions.

Examination Content

■ Description of the Examinations

Four Low Voltage Contractors licensure examinations are offered to correspond with the four classes of Low Voltage licenses – Alarm(A), General(G), Telecommunications(T), and Unrestricted (U). All examinations consist of multiple-choice questions. Please refer to the information on the following pages for the number of questions on each examination and the content categories.



Content Categories for Low Voltage Contractors

	<u>Number of Questions</u>			
	<u>A</u>	<u>G</u>	<u>T</u>	<u>U</u>
1. Regulations, Laws, and Administrative Functions	<u>18</u>	<u>10</u>	<u>16</u>	<u>23</u>
<i>A. Comply with Laws</i>	4	2	4	4
1. Workers' compensation				
2. Unemployment insurance				
3. Employer's tax guide (circular E)				
4. Georgia Construction Industry Licensing Board (complaint procedures, function of, renewal, etc.)				
5. State sales and use tax				
6. Business license				
7. American's with Disabilities Act (ADA)				
<i>B. Comply with Regulations</i>	14	8	12	19
1. Obtain necessary low voltage permits and inspections				
2. Code of Federal Regulations, Title 29, Part 1926 (OSHA)				
3. National Fire Protection Association (NFPA)				
4. Underwriter's Laboratory (UL) or other appropriate certification				
5. National Electrical Code (NEC)				
6. Insurance: liability, property damage, auto, etc.				
7. Accident or incident reports				
2. Installation and Servicing	<u>57</u>	<u>40</u>	<u>59</u>	<u>67</u>
<i>A. Read blueprints to determine installation requirements</i>	10	3	10	10
1. Determine if equipment meets the NEC, NFPA, ADA, and local requirements				
2. Select equipment to be installed considering design specifications, customer preferences, and physical environment: power supplies, transformers, batteries, smoke/heat detectors, water flow valves, etc.				
a. commercial				
1. health care (hospital, nursing home, personal care, etc.)				
2. places of assembly (stadium, church, auditorium, etc.)				
b. industrial				
1. hazardous				
2. non-hazardous				
c. residential				
3. Select type and gauge of wire to be installed				
4. Determine and/or verify locations of devices/equipment/wiring				
5. Determine the impact of designed floor space (modular furniture, fixed walls, etc.) on installation				
6. Identify symbols on blueprint legend				
7. Identify fire wall location				
8. Identify types of circuits (series, parallel, normally open/closed, EOL, etc.)				
<i>B. Determine how distribution methods (wiring/cablings) affect building structural and installer safety</i>	10	5	16	14
1. Commercial				
2. Industrial				
a. hazardous				
b. non-hazardous				
3. Residential				



Number of Questions

A G T U

C. Cable/Wire Installation – Interior

20 16 19 20

1. Select cabling/wiring route (risers, plenums, etc.)
2. Install conduit/tubing according to job specifications
3. Pull cable/wire through conduit or through ceiling
4. Size and drill holes through existing construction
5. Fish cable/wire through existing construction
6. Determine and place cable/wire supports at specified intervals
7. Splice or terminate cable/wire at specified locations (equipment or device end)
8. Label cable/wire during or after installation
9. Repair fire-rated assemblies (walls, floors, ceilings, etc.)
10. Install lightning and surge protection
11. Install bonds and grounds at specified locations
12. Observe safety considerations during installation (hard hat, safety glasses, foreign voltage, etc.)
13. Install specified equipment: mounting devices, control panels, PBX/KSU, patch panels, etc.
14. Test all installed devices for proper operation
15. Evaluate installation for accepted standards of workmanship

D. Cable/Wire Installation – Exterior

13 14 10 18

1. Select cabling/wiring route
2. Install conduit/tubing according to job specifications
3. Pull cable/wire through conduit, direct burial, or aerial
4. Size and drill holes through existing construction
5. Determine and place cable/wire supports at specified intervals
6. Splice or terminate cable/wire at specified locations (equipment or device end)
7. Label cable/wire during or after installation
8. Repair fire-rated assemblies (walls, floors, ceilings, etc.)
9. Install lightning and surge protection
10. Install bonds and grounds at specified locations
11. Observe safety considerations during installation (foreign voltage, hazardous gases, proper safety equipment, etc.)
12. Test all installed devices for proper operation
13. Evaluate installation for accepted standards of workmanship

E. Documentation

4 2 4 5

1. Provide documentation regarding customer installation: type of device, location, wiring, owner’s manual, user guide, programming record (hard copy, diskettes, tape, etc.)
 - a. Commercial
 - b. Residential
 - c. Industrial

Total Number of Test Questions **75 50 75 90**

Additional Pre-test Questions Per Examination **15 10 10 15**

Total Number of Test and Pre-test Questions **90 60 85 105**



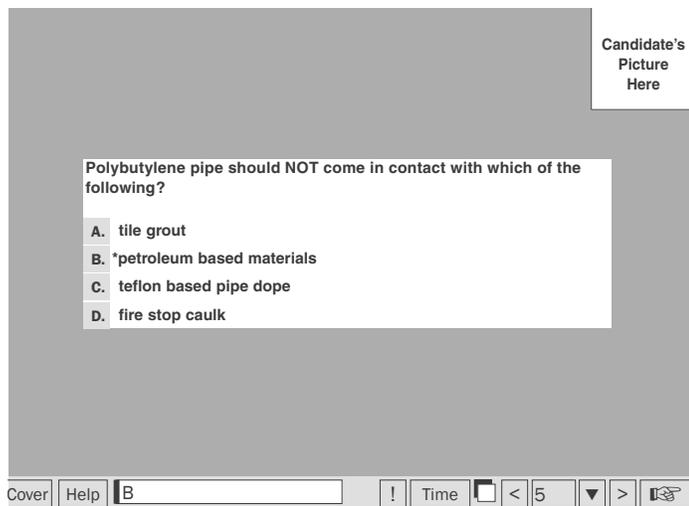
Taking the Examination

Your examination will be given by computer at an AMP Assessment Center. You do not need any computer experience or typing skills to take your examination.

After your identification has been confirmed, you will be directed to a testing carrel. You will be instructed on-screen to enter your Social Security number. You will take your photograph which will remain on screen throughout your examination session. This photograph will also print on your score report.

Prior to attempting the examination, you will be given the opportunity to practice taking an examination on the computer. The time you use for this practice examination is NOT counted as part of your examination time or score. When you are comfortable with the computer testing process, you may quit the practice session and begin the timed examination.

Following the practice examination, you will begin the timed examination. Before beginning, instructions for taking the examination are provided on-screen.



The computer monitors the time you spend on the examination. The examination will terminate if you exceed the time allowed. You may click on the "Time" box in the lower right-hand corner of the screen. A digital clock indicates the time remaining for you to complete the examination. The Time feature may be turned off during the examination.

Only one examination question is presented at a time. The question number appears in the lower right hand corner of the screen. Choices of answers to the examination question are identified as A, B, C, or D. You must indicate

your choice by either typing in the letter in the response box in the lower left hand of the computer screen or clicking in the option using the mouse. To change your answer, enter a different option by typing in the letter in the response box or by clicking on the option using the mouse. You may change your answer as many times as you wish during the examination time limit.

To move to the next question, click on the forward arrow (>) in the lower right portion of the screen. This action will move you forward through the examination question by question. If you wish to review any question or questions, click the backward arrow (<) or use the left arrow key to move backward through the examination.

An examination question may be left unanswered for return later in the examination session. Questions may also be bookmarked for later review by clicking in the blank square to the right of the Time button. Click on the hand icon to advance to the next unanswered or bookmarked question on the examination. To identify all unanswered and bookmarked questions, repeatedly click on the hand icon. When the examination is completed, the number of examination questions answered is reported. If not all questions have been answered and there is time remaining, return to the examination and answer those questions. Be sure to provide an answer for each examination question before ending the examination. There is no penalty for guessing.

■ Time Limits

You will have four (4) hours to complete the Low Voltage Contractors licensure examinations. This limit includes time for the pre-test questions (see page 6).

■ Pre-testing

The total number of questions on the examinations will include pre-testing of new test questions. The number of questions used to compute your score is shown on page 8 (total number of test questions). The pre-test questions will not be used to compute your score, but will allow for the collection of statistical information on the questions. Pre-test questions will be either rewritten or included on future examinations based on the statistical information collected.

■ Candidate Comments

During the examination, comments may be provided for any question by clicking on the button displaying an exclamation point (!) to the left of the Time button.



This opens a dialogue box where comments may be entered. Comments will be reviewed, but individual responses will not be provided.

■ Inclement Weather, Power Failure or Emergency

In the event of inclement weather or unforeseen emergencies on the day of an examination, AMP will determine whether circumstances warrant the cancellation, and subsequent rescheduling, of an examination. The examination will usually not be rescheduled if the Assessment Center personnel are able to open the Assessment Center.

You may visit AMP's website at www.goAMP.com prior to the examination to determine if AMP has been advised that any Assessment Centers are closed. Every attempt is made to administer the examination as scheduled; however, should an examination be canceled at an Assessment Center, all scheduled candidates will receive notification following the examination regarding rescheduling or reapplication procedures.

If power to an Assessment Center is temporarily interrupted during an administration, your examination will be restarted. Responses provided up to the point of interruption will remain intact, but for security reasons the questions will be scrambled.

rating of each question is used to determine the passing point of the examination form. In this manner, passing an examination form with more difficult questions will require a smaller number of correct answers, while passing an examination form with less difficult questions will require a larger number of correct answers. This process of determining the passing score is referred to as the modified Angoff method.

A new examination form is created for each examination administration. When a new examination is created, it is not possible to select questions with exactly the same difficulty level as all previous examinations. Accordingly, requiring candidates to answer correctly the same number of questions in order to pass different examination forms would be unfair.

Therefore, the number of answers required to pass any given examination form will vary from one form to another, based on the difficulty of the questions. If the questions selected for one examination form are more difficult, fewer questions are required to be answered correctly to pass that examination form. For example, a candidate may be required to answer 68% of the questions correctly to pass a more difficult examination form. To pass a less difficult examination form, correct answers for 72% of the questions may be required.

After the Examination

■ Statistical Review of Examination Performance

After administration of the low voltage examinations, a statistical analysis of the examination and of each question is conducted. Based on the statistics and the candidates' comments, questions that might be flawed will be reviewed by the Division. After review of the questions on the examinations, the examinations are scored.

■ Difficulty Rating

The examination is developed in a manner to ensure consistency in evaluating the candidates' competency in the profession. Individual questions used on the examination are developed using a panel of licensed contractors. As each question is approved, it is assigned a difficulty rating by the panel. The difficulty

■ Final Scaled Scores

To record and report scores for examination forms with different passing points in a consistent manner, the minimum passing score for each examination form is converted to a final scaled score of 70. In this manner, the minimum passing score is 70 for all examination forms, regardless of the difficulty level of the individual examination form.

In the example above, candidates who correctly answer 68% of the questions on the more difficult examination would receive a final scaled score of 70. Candidates who answer more questions correctly would receive a final scaled score proportionately higher than 70. Candidates who answer fewer questions correctly would receive a final scaled score proportionately lower than 70.

The final scaled score of 70 is required for passing any examination form. By scaling the scores based on a common passing score of 70, a candidate's performance from one examination form to another



is directly comparable, the relative performance of examination forms administered from one time period to another can be evaluated, and the processing of candidate scores is fairer because the difficulty level of the individual examination forms has been controlled.

■ Score Reports

Approximately six (6) weeks after each examination window, score reports will be mailed. Examination scores cannot be released over the telephone, so please do not call the Board Office for this purpose. Failing candidates will receive their examination score and subscores in the major examination content areas. Subscores will be provided for the examination major content areas listed in this bulletin (see page 5).

■ Licenses

The Board Office will mail passing candidates their licenses approximately six (6) weeks after each examination window. Any questions regarding licensing should be directed to the Board Office at 237 Coliseum Drive, Macon, GA 31217-3858, 478-207-1416.

■ Re-examination Procedure

Candidates failing the examination must retake and pass the examination in order to become licensed. Board rule 121-2-.05 states that "Any applicant for licensure who takes and fails the examination twice after July 1, 1989, must present satisfactory evidence to the appropriate division of the Board that the applicant has completed a Board approved review course before such applicant will be admitted to a third examination. If such applicant fails the examination a third time, the applicant shall not be required to complete additional courses prior to taking subsequent examinations." Questions about examination scheduling may be directed to Applied Measurement Professionals, Inc., Candidate Support Center at 800-345-6559. A current application form may be obtained from the Board Office or from the Board's website at www.sos.state.ga.us.

■ Duplicate Score Report

Requests for a duplicate score report must be made in writing within one year of the examination date. Complete the request form enclosed in this booklet, include a check or money order for \$25 per copy (made payable to AMP), and mail your request to AMP. Duplicate score reports will be processed and mailed within approximately five (5) business days following receipt of the request.

■ Sample Questions

The following questions are intended to help you become familiar with some of the types of questions you may encounter on the examinations. These sample questions do not represent the full range of content or difficulty levels contained in the actual examinations.

1. Which of the following type of bonds will ensure that a respondent will complete the work to the specifications for a project?
 - A. fidelity
 - B. grounding
 - *C. performance
 - D. payment
2. Which of the following is a type of cable entrance that is used on the outside of a plant building?
 - *A. aerial
 - B. cosmetic
 - C. cored
 - D. regulated
3. Which of the following is necessary to ensure proper cable installation standards?
 1. pre-cut over inspection
 2. selection of equipment room
 3. communication with suppliers
 4. job in progress inspection
 - A. 1 and 2 only
 - *B. 1 and 4 only
 - C. 2 and 3 only
 - D. 3 and 4 only

***Correct Answer**





Duplicate Score Report

DIRECTIONS: Use this form to request a duplicate score report. Complete all requested information. This form must be received within one year of the examination date and include a check or money order, payable to AMP, for \$25 per copy. Duplicate score reports will be mailed within approximately five (5) business days following receipt of the request.

Name: _____ Social Security #: _____

Address: _____

_____ Daytime Phone: _____

Test Taken: Low Voltage

Examination Date: _____ Assessment Center: _____

I hereby authorize AMP to send me a duplicate score report.

Signature: _____ Date: _____

Mail to: Applied Measurement Professionals, Inc.
18000 W. 105th St.
Olathe, KS 66061