

Vermont Division of Fire Safety Trade Licensing and Certifications Candidate Information Bulletin



FREQUENTLY ASKED QUESTIONS

- How do I register to test? To register and schedule for testing, go to https://www.provexam.com/schedule. You may also call us at 801-733-4455. Click here for more information about registering.
- WHERE CAN I TEST? You may test at any one of Prov's testing centers throughout the United States. <u>Click here</u> for a current list of our Vermont based testing centers.
- 3. How much does it cost? Exams costs \$80.00 each.
- WHEN DO I GET MY TEST RESULTS? Exam results are available at the testing center once you complete your exam.
- ARE THERE ANY STUDY AIDS? Yes, in our <u>bookstore</u>
 we sell practice examinations to help you prepare
 for your test.
- 6. What is on the test? <u>Click here</u> for information about the available examinations.

MORE QUESTIONS

Please read through this bulletin completely for answers to your questions. If you still have unanswered questions, you may contact us at the following:

For Licensing Questions Vermont
Division of Fire Safety
Trade Licensing and
Certifications
45 State Drive

Waterbury, VT 05671 802-479-7564 Toll Free: 800- 640-2106

https://firesafety.vermont. gov/licensing For Testing Questions Prov, Inc.
200 W Civic Center Drive
Suite 160
Sandy, UT 84070
Text or Call: (801) 733-4455
Hours: 8:00am to 4:00pm
www.provexam.com

GENERAL TESTING INFORMATION

The Vermont Division of Fire Safety oversees the licensing process for contractors. The Board has contracted with Prov, Inc. to develop and administer its licensing examination program for contractors. This bulletin has been developed to help explain the rules and processes candidates will need to undertake to complete the testing requirement for their contractor license.

Prov is not authorized to make the determination of which examination(s) candidates must take. If a candidate is unsure which exam is needed for the license being sought, resolve this question before registering. If candidates have questions regarding which exam(s) to take, they must call the Board at 802-479-7564. If candidates take the wrong exam, the exam fee will not be refunded.

EXAMINATION CATEGORIES AND COST

All examinations for the Vermont Division of Fire Safety are available via computer. All examination costs are **\$80.00**. The following are available exams:

Elevator Exams

- Vermont Elevator Mechanic
- Vermont Lift Mechanic

Plumbing Exams

- Vermont Master Plumber
- Vermont Journeyman Plumber
- P1 Vermont Water Heater Specialist
- P2 Vermont Heating System Specialist
- P1/P2 Vermont Water Heater/Heating System Specialist
- P3 Vermont Water Treatment Specialist

Electrical Exams

- Vermont Appliance and Motor Repairs
- Vermont Appliance and Motor Repairs (Spanish)
- Vermont Automatic Gas and Oil Heating
- Vermont Commercial Fire Alarm

- Vermont Electric Lock Installation
- Vermont Electric Lock Installation (Spanish)
- Vermont Electrical Well Pumps
- Vermont Farm Equipment
- Vermont Gas Pump Installation & Bulk Plant Works
- Vermont Journeyman Electrician
- Vermont Journeyman Electrician (Spanish)
- Vermont Lightning Rod Installations
- Vermont Master Electrician
- Vermont Outdoor Advertising
- Vermont Refrigeration & Air Conditioning Electrical
- Vermont Solar Photovoltaic Installation Electrician

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TESTING WITH PROV

Your exam will be administered by computer at one of Prov's testing centers. Prov's testing system is easy to use and requires no specific computer experience to take the test.

The following link will take you to a short video that demonstrates Prov's testing system: https://youtu.be/h3T9svnIdLY.

WHERE TO TAKE YOUR EXAM

You may take your examination at any of Prov's testing facilities throughout the United States. Prov has two (2) Vermont-based testing centers where candidates can take their examinations. These testing centers are in Lyndonville and Manchester Center. Site addresses are provided at the end of this bulletin.

How to Schedule Online

1. To schedule online, navigate to the following URL:

https://www.provexam.com/register

Enter your identifying information into the system. The State has already shared your testing information with Prov. We need to locate your information within our system.

Follow the on-screen fields to enter your Known Candidate ID and your Last Name. The Candidate ID will be provided to you in your registration letter received from the Board. The Candidate ID will begin with 200 and will contain 10 digits. Please enter all the numbers.

Then, enter your last name and select the **Retrieve Details** button.

3. On the Welcome Screen, you will schedule a Date, Time, and Location for your exam by selecting the link labeled:

Find suitable time and venue

4. The scheduling system will display a map to graphically show where the different testing centers are located. Select a testing center from the list of centers to the right of the map.



- 5. Select the SCHEDULE link to check the calendar for the testing center.
- 6. Select a test date and time from the calendar that matches your schedule.
- 7. Confirm your selected date and time and select Add to Cart.
- 8. Proceed with payment. If you have provided an email address, the invoice for your exam payment will be automatically emailed to you.

If you have any problems with online scheduling, give us a call at (801)733-4455.

SCHEDULING BY PHONE

To schedule for an examination by phone, candidates should contact Prov at 801-733-4455. Prov's scheduling staff is available 8:00 a.m. through 6:00 p.m. ET, Monday through Friday.

Candidates should be prepared to provide the Prov scheduling staff with their name, driver's license number and their address. Once Prov confirms the candidate's identity, Prov staff will search the database for the next available testing session at the candidate's preferred testing location and will provide candidates with any alternate locations that may be near their address.

Once candidates are scheduled. Prov staff will email them information regarding their testing schedule.

CANCEL/RESCHEDULING POLICY

If you need to change or cancel your testing appointment, you must contact Prov at least three (3) business days prior to your scheduled test date. Rescheduling is free if Prov is notified by the deadline.

If you fail to appear for your test or fail to cancel or reschedule your testing session by the close of business three days prior to your scheduled test date, you will forfeit your exam fees.

Preparing for Your Exams

The licensing examination that you will take has been designed to test what qualified individuals' contractors should know as they work in the construction field.

The test questions used on the examinations have been prepared and reviewed by a panel of qualified individuals and cover the wide range of topics individuals would normally encounter as a contractor during regular work operations.

Prov recommends that you prepare for your exam by familiarizing yourself with the subject areas listed in each exam description. Additionally, familiarize yourself with the reference materials that are allowed during the examination. The more time you spend outside of the testing room studying, the less time you will need to spend in the testing room trying to location information. You are encouraged to prepare your test materials by highlighting text or placing permanent tabs on important pages.

Purchasing Reference Materials & Study Guides

The exams described above are based upon the study references for each exam. We have listed the reference book's ISBN and a website at which candidates can purchase the reference book. Most reference books can also be purchased by phone or online through the following companies. Shipping charges will apply. Brick and mortar locations are indicated, but candidates should call to verify that orders are ready for pickup.

Many of the books for your examination are available from Prov using the following information:

Prov Bookstore

200 W. Civic Center Drive, Suite 160 Sandy, Utah 84070

https://www.provexam.com/shop/

Phone: 801-733-4455

Books also available from the following book vendors.

@ Home Prep, Inc.

900 East Hill Ave., Ste. 380, Knoxville, TN 37915 www.contractor-licensing.com 800-952-0910

AAA Construction School, Inc.

34 Arlington Road South, Jacksonville, FL 32216 www.aaaconstructionschool.com

800-741-7277 or 904-722-9994

American Contractors Exam Services
 737 Southern Hwy., Mineral Wells, WV 26150
 www.examprep.org
 800-992-1910

Builder's Book Depot

1001 E. Jefferson Rd., Ste., 5, Phoenix, AZ 85034 www.buildersbookdepot.com

800-284-3434 or 602-252-4050

International Code Council
 900 Montclair Rd., Birmingham, AL 35213
 www.iccsafe.org

800-786-4452

My Pearson Bookstore

http://www.mypearsonstore.com

800-947-7700 (Opt. 5)

North American Contractors Assoc.

<u>www.infonaca.com</u> 336-540-0149

If candidates need assistance in ordering any study materials, they may contact Prov by phone at 801-733-4455.

TEST DAY RULES AND PROCEDURES

Check-in Deadline

The doors to each testing center will open at least 15 minutes before all scheduled testing appointments in order to check candidates into the testing center.

You should plan to arrive early to make sure you are seated by the time the testing begins. If you arrive late, AND the testing session has already begun, YOU WILL BE TURNED AWAY, will forfeit your exam fees, and will be required to reschedule for a future testing date.

Proof of Identity

Upon arriving at the testing center, you will be required to show government-issued, photo-bearing identification. The photo-bearing ID must be current and valid. Forms of valid photo-bearing ID are a driver's license, passport, or military ID. You will also be required to sign a test center log and will be photographed by the test center staff. If you cannot produce a valid government-issued photo ID, refuse to participate in signing the test center log, or refuse to be photographed, you will be dismissed from the testing center and forfeit all testing fees for that testing session.

If you do not have a photo ID, you may still present a valid State driver's license without a photo, a State ID card without a photo that is issued by the DMV, or a birth certificate.

Prohibited Items

No cameras, recorders, cell phones or other communication devices are allowed in the testing room. Talking and smoking are not allowed in the testing room.

Approved Items

You may bring the following approved items into the testing center:

- Pencils. (Paper/pencil testing only)
- Calculator. Only simple 4-function calculators are permitted. PDAs, tablets, cell phones or other special calculators are NOT permitted.
- Approved References. (Refer to the exam information for the specific references permitted for the exams)

Reference Material Rules

All examinations are designed to allow you to use **authorized** references while taking their exams.

For a list of what reference materials are authorized for the exams, please refer to the exam description for the candidate's exam. All reference materials will be checked by the Prov test administrator prior to the candidates being permitted access to the testing room.

You should prepare your reference materials using ONLY the following methods.

- Highlighting
- Attaching permanent tabs

Reference materials which do not meet the following guidelines will not be allowed in the testing room. These guidelines are in place to ensure that every candidate is tested fairly and that no candidate has access to unapproved resources.

- Handwritten notes are not allowed in any portion of a reference book.
- Moveable tabs are NEVER permitted in a reference book (Temporary tabs, such as Post-it notes, paper taped or glued in your books are not allowed and must be removed from the reference books before the exam will begin).
- A reference book CANNOT contain Post-it notes.
- Photocopied documents CANNOT be added to a reference book.
- Photocopied versions of a reference book are NEVER permitted.
- Test preparation study guides are NOT approved references and are NOT permitted in the testing center; this includes practice examinations.

We ask that you leave all unauthorized materials in your car or vehicle. If you are caught using unauthorized materials during testing, these materials will be confiscated, your testing will be terminated with fees forfeited, and the Department will be notified of your dismissal from the exam. During the testing process you MAY NOT:

- Share reference materials during testing.
- Highlight, underline, mark or write any kind of information in their reference materials during testing.

Visitor Policy

No one other than the candidate will be allowed in the testing room. Non-testing visitors are NOT permitted to wait in the lobby while candidates test.

Unethical Conduct Policy

Any individual caught giving or receiving assistance during or after the examination or caught using unauthorized materials during the examination will be reported directly to the Division. Those caught in the act of cheating will be dismissed from the examination and their testing results will be frozen. Furthermore, the candidate will forfeit the examination fees paid. Finally, anyone caught with test questions in their possession, either during or following the examination will be prosecuted by Prov for theft of copyrighted testing materials.

RESULTS REPORTING

Upon completion of an examination, your test will be scored, and you will be provided with a score result while at the testing center. There is no charge for the on-site scoring. The State will be notified of your results automatically. All exams will be scored and graded against a cut-score of 70%. Those achieving a score of 70% or higher will receive a passing grade on that exam.

If you are successful in your testing attempt, the State will mail your license to you.

RETESTING POLICY

If candidates fail their initial exam, they are permitted to retake the exam another two times within their eligibility period. There is no waiting period between testing attempts; you can schedule a new testing session for the first available testing date. You may not, however, retake an exam once you have received a passing score. Retake fees are the same as the original exam fees.

REVIEWS

Reviews are intended to help candidates audit their testing results by allowing them to see which questions were missed during testing.

You may request a review of your exam only after failing an exam category a minimum of two (2) times.

To be eligible for a review, you must score within 10 points of the required 70% passing score. The review for all tests is 1-1/2 hours in length.

During the review you will view the questions you missed on your most recent examination. Additionally, you will view the incorrect answers you chose for those questions.

The review will be conducted under the same testing conditions as the exam using the same test security rules.

The cost of the review is the same as the exam fees and based on when you wish to review your test. Candidates will request or schedule a review using the same methods described earlier for scheduling.

EXAM CHALLENGE PROCESS

If during an exam or review, candidates encounter a question they think is inaccurate or otherwise incorrect, they are encouraged to submit an Exam Comment form to Prov detailing why they feel the question is in error.

Candidates testing on computers may make their comments in the testing system, while those taking a paper/pencil format exam may submit comments on a comment form that can be obtained from the test proctor at the testing center. Candidates who are reviewing an exam will automatically be provided with an Exam Comment form.

Prov staff will review each comment within two weeks of receipt by Prov and will make scoring adjustments should any comment result in a change to a test question.

HAND SCORE REQUEST

Prov ensures the accuracy of our exam results. Our computer system is designed to identify and report any potential error in data collected from an exam session. If you would like to have your score reassessed for accuracy, you can request a Hand Score by calling Prov at 1-801-733-4455 and asking for a Hand Score Request Form.

A Hand Score Request form requires a signature and must be mailed to Prov. Forms must be received by Prov no later than ninety (90) days after your examination administration date and must be accompanied by a copy of your original score letter.

Once a Hand Score is received, Prov Staff will process the request within seven (7) to ten (10) business days. During the Hand Score process a staff member will ensure that your answers were properly recorded and scored by comparing the captured answers to the exam key.

Upon completion of the Hand Score we will provide a letter by mail to report the outcome of the reassessment. The cost of the hand score is \$25.00 (includes tax).

PROV'S NON-DISCRIMINATION STATEMENT

Prov provides equal access to its exams and testing programs for all eligible persons. Although individual jurisdictions that Prov represents are wholly responsible for determining eligibility of candidates, it is the policy of Prov to maintain an environment free of discrimination and to prohibit discrimination and harassment against any person on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and veteran, marital or family status.

Harassment of Prov program participants, proctors, staff or candidates will not be tolerated. If candidates wish to express concerns about discrimination, they should contact Prov at 801-733-4455 or write to: Prov, Inc., 5200 NW 43rd St., Suite 102-167, Gainesville, FL 32606.

SPECIAL ACCOMMODATIONS

Prov complies with the Americans with Disabilities Act (ADA) in providing special accommodations for candidates that require additional assistance during the testing process.

If candidates feel that they qualify for a special accommodation during testing, they should contact Prov at (801)733-4455. Prov will require written documentation from a licensed physician or psychologist documenting the disability and further require a request describing the requested remedy or by the licensing board.

Prov will then work directly with the candidates to make the accommodations they will need in order to complete their examination.

TESTING SITE AVAILABILITY

You may take your examination at anyone of Prov's testing facilities nationwide.

You can also take the exam at home using Prov's Examroom® service.

What is Examroom?

Examroom is a remote test monitoring service that allows you to take the test on your own computer at your home. You schedule the test the same way you would an in-person testing site; by selecting your preferred test date and time. Then, on test day, you log into the Examroom website and request to start your exam.

A test proctor will greet you over your computer, verify your identity, take your picture, and observe you throughout the testing process.

How to decide whether to use Examroom? Not every computer system is capable of taking a test on Examroom. The following are the MINIMUM requirements that your computer system would need in order to qualify to take the test using the Examroom service:

- Operating system on computer needs to be recent (less than 3-4 years old)
- Works on a MAC, PC, or Chromebook
- Need either a Chrome or Firefox browser (Chrome works best)
- Need a functioning computer web-camera and microphone
- Need a good consistent Internet connection capable of uploading files in excess of 3 Mbps

Please use the following link to do a system check **before you schedule** the exam to make sure your computer system will support testing using the Examroom Service.

https://examroom.ai/systemtest/

When prompted "Permission to access camera and microphone", you must click "Allow".

If your system does not allow you to test at home, don't worry, we have some great testing locations that are not too far away.

Fixed Testing Locations

The following are the existing testing sites and testing days of the week. Note that sites may change as needed. Please refer to the current online scheduling system to find available testing times for each location.

| Location | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|-------------------|--------|---------|-----------|----------|--------|----------|
| Manchester Center | * | * | * | * | * | |
| Lyndonville | * | * | * | * | * | |

VERMONT TEST SITE LOCATIONS

1. Northern Vermont University - Lyndon Campus Testing Center

1001 College Road, 2nd Floor Samuel Reed Library Lyndonville, VT 05851

Computer Tests are administered every Monday through Friday by appointment at 9:00am and 1:00pm

Directions: Please view the campus map <u>here</u>.

Lyndonville is at Exit 23 on Interstate 91. After exiting the ramp, enter U.S. Rt. 5 north and take an immediate left at the stoplight (Back Center Road). Follow for 1.5 miles to the stop sign. Continue straight for 100 yards, turn left at Lyndon Institute onto College Road. Continue one mile up the hill to the College.

2. Manchester Tutorial Center

Testing Services 3511 Richville Road Manchester Center, VT 05255

Computer Tests are administered every Monday through Friday by appointment at 9:00am and 1:00pm

Directions: http://tutoringvermont.org/home/about-us/#our-locations

EXAM DESCRIPTIONS

P1 Vermont Water Heater Specialist

Installation, replacement, and repair of any residential, industrial, or commercial domestic water heaters and/or associated hot water supply tanks.

| Number of Questions | 30 |
|----------------------|----|
| Time allowed (hours) | 2 |

| Subject Area | # Quest. |
|-------------------------------|----------|
| General Requirements | 6 |
| Installation | 8 |
| Water Supply and Distribution | 6 |
| Piping Valves & Fittings | 6 |
| Safety Devices | 2 |
| Safety | 2 |

References

- 2021 State of Vermont Plumbing Rules, 2021. State of Vermont. https://firesafety.vermont.gov/document/2021-ipc-vt-plumbing-rules
- Basic Safety, 2015. ISBN: 0-13-412901-6. NCCER MATS Testing, 13614 Progress Blvd, Alachua, FL 32615. Available at http://nccer.pearsonconstructionbooks.com
- <u>HVAC Level 1 2013</u>, 2013. Prentice Hall, P.O. Box 11071, Des Moines, IA 50336.
- <u>HVAC Level 2 2013</u>, 2013. Prentice Hall, P.O. Box 11071, Des Moines, IA 50336.
- International Plumbing Code 2021, 2021. ISBN: 978-1609839628. International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478.

P1/P2 Vermont Water Heater/Heating

System Specialist

Installation, replacement, and repair of residential, industrial, or commercial water heaters, hot water supply tanks, hydronic space heating systems, including radiant, solar and other types of hydronic system design. Any work on steam systems shall be limited to steam systems with operating pressure not to exceed 15 PSIG.

| Number of Questions | 60 |
|----------------------|----|
| Time allowed (hours) | 3 |

| Subject Area | # Quest. |
|----------------------------|----------|
| General Knowledge | 10 |
| Hydronic Systems | 9 |
| Piping, Pumps, Valves | 12 |
| Fuel Gas and Oil | 4 |
| Low Pressure Steam Boilers | 10 |
| Water | 7 |
| Testing and Inspection | 4 |
| Local Amendments | 4 |
| | |

- 2021 State of Vermont Plumbing Rules, 2021. State of Vermont. https://firesafety.vermont.gov/document/2021-ipc-vt-plumbing-rules
- <u>HVAC Level 1 2013</u>, 2013. Prentice Hall, P.O. Box 11071, Des Moines, IA 50336.
- <u>HVAC Level 2 2013</u>, 2013. Prentice Hall, P.O. Box 11071, Des Moines, IA 50336.
- International Plumbing Code 2021, 2021. ISBN: 978-1609839628. International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478.
- Low Pressure Boilers, 5th. American Technical Publishers, 10100 Orland Parkway Suite 200, Orland Park, IL 60467-5756. Available at www.go2atp.com.
- Modern Refrigeration and Air Conditioning, 21st Edition. ISBN: 978-1-63563-877-6. Goodheart-Wilcox Company, Inc., 18604 West Creek Dr., Tinley Park, IL 60477-6243. Available at www.g-w.com

P2 Vermont Heating System Specialist

Installation, replacement, and repair of residential, industrial, or commercial hydronic space heating systems, including radiant, solar and other types of hydronic system design. Any work on steam systems shall be limited to steam systems with operating pressure not to exceed 15 PSIG

| Number of Questions | 50 |
|----------------------|-----|
| Time allowed (hours) | 2.5 |

| Subject Area | # Quest. |
|----------------------------|----------|
| General Knowledge | 8 |
| Hydronic Systems | 6 |
| Piping, Pumps, Valves | 10 |
| Fuel Gas and Oil | 4 |
| Low Pressure Steam Boilers | 7 |
| Water | 7 |
| Testing and Inspection | 4 |
| Local Amendments | 4 |

References

- 2021 State of Vermont Plumbing Rules, 2021. State of Vermont. https://firesafety.vermont.gov/document/2021-ipc-vt-plumbing-rules
- <u>HVAC Level 1 2013</u>, 2013. Prentice Hall, P.O. Box 11071, Des Moines, IA 50336.
- HVAC Level 2 2013, 2013. Prentice Hall, P.O. Box 11071, Des Moines, IA 50336.
- International Plumbing Code 2021, 2021. ISBN: 978-1609839628. International Code Council, 4051 West Flossmoor Road, Country Club Hills II 60478
- Low Pressure Boilers, 5th. American Technical Publishers, 10100 Orland Parkway Suite 200, Orland Park, IL 60467-5756. Available at www.go2atp.com.
- Modern Refrigeration and Air Conditioning, 21st Edition. ISBN: 978-1-63563-877-6. Goodheart-Wilcox Company, Inc., 18604 West Creek Dr., Tinley Park, IL 60477-6243. Available at www.g-w.com

P3 Vermont Water Treatment Specialist

Installation, replacement, and repair of residential, industrial, or commercial potable water treatment and filtration equipment.

| Number of Questions | 40 |
|----------------------|----|
| Time allowed (hours) | 2 |

| Subject Area | # Quest. |
|-------------------------------|----------|
| General Requirements | 9 |
| Installation | 5 |
| Water Supply and Distribution | 9 |
| Piping Valves & Fittings | 5 |
| Water Treatments | 7 |
| Safety | 5 |

References

- 2021 State of Vermont Plumbing Rules, 2021. State of Vermont. https://firesafety.vermont.gov/document/2021-ipc-vt-plumbing-rules
- Basic Safety, 2015. ISBN: 0-13-412901-6. NCCER MATS Testing, 13614 Progress Blvd, Alachua, FL 32615. Available http://nccer.pearsonconstructionbooks.com
- International Plumbing Code 2021, 2021. ISBN: 978-1609839628. International Code Council, 4051 West Flossmoor Road, Country Club Hills. IL 60478.
- The NALCO Water Handbook, 4th Edition. ISBN: 978-1259860973. An Ecolab Company. https://www.amazon.com/NALCO-Water-Handbook-Fourth/dp/1259860973/ref=sr_1_1?crid=1P63662G7XOJW&keyw ords=nalco+water+handbook&gid=1583680846&s=books&a mp;sprefix=nalco+%2Cstripbooks-intl-ship%2C180&sr=1-1

Vermont Appliance and Motor Repairs

A Vermont licensed Type-S Journeyman electrician for Appliance and Motor Repairs is entitled to perform specialty electrical installations after completing an accredited training and experience program recognized by the board; or having acceptable training and experience. The licensed person must pass a separate exam in the specialty selected, Appliance and Motor Repairs.

| Number of Questions Time allowed (hours) | 35 2 |
|---|----------|
| Subject Area | # Quest. |
| General Electrical Knowledge | 11 |
| Wiring & Protection | 5 |
| Wiring Methods & Materials | 6 |
| Motors & Controls | 6 |
| Equipment for General Use | 7 |

References

- American Electrician's Handbook, 17th Edition. ISBN: 978-1260457919. McGraw Hill Publishing Inc., P.O. Box 182604, Columbus, OH 43272. Available at https://www.mhprofessional.com/american-electricianshandbook-seventeenth-edition-9781260457919-usa
- NEC Notes, 2023. Hand Written Notes.
- NFPA 70 National Electrical Code 2020, 2020. ISBN: 9781455922970. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. Available at www.nfpa.org.

Vermont Appliance and Motor Repairs

(Spanish)

A Vermont licensed Type-S Journeyman electrician for Appliance and Motor Repairs is entitled to perform specialty electrical installations after completing an accredited training and experience program recognized by the board; or having acceptable training and experience. The licensed person must pass a separate exam in the specialty selected, Appliance and Motor Repairs.

| Number of Questions | 35 |
|----------------------|----|
| Time allowed (hours) | 2 |

| Subject Area | # Quest. |
|------------------------------|----------|
| General Electrical Knowledge | 11 |
| Wiring & Protection | 5 |
| Wiring Methods & Materials | 6 |
| Motors & Controls | 6 |
| Equipment for General Use | 7 |

References

- American Electrician's Handbook, 17th Edition. ISBN: 978-1260457919. McGraw Hill Publishing Inc., P.O. Box 182604, Columbus, OH 43272. Available at https://www.mhprofessional.com/american-electricianshandbook-seventeenth-edition-9781260457919-usa
- NEC Notes, 2023. Hand Written Notes.
- NFPA 70 National Electrical Code 2020, 2020. ISBN: 9781455922970. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. Available at www.nfpa.org.

Vermont Automatic Gas and Oil Heating

A Vermont licensed Type-S Journeyman electrician for Automatic Gas and Oil Heating is entitled to perform specialty electrical installations after completing an accredited training and experience program recognized by the board; or having acceptable training and experience. The licensed person must pass a separate exam in the specialty selected, Automatic Gas and Oil Heating.

| Number of Questions | 40 |
|----------------------|-----|
| Time allowed (hours) | 1.5 |

| Subject Area | # Quest. |
|------------------------------|----------|
| General Electrical Knowledge | 6 |
| Motors & Controls | 8 |
| Wiring Methods & Materials | 13 |
| Wiring & Protection | 10 |
| Local Amendments | 3 |

References

- 2020 State of Vermont Electrical Safety Rules, 2020. State of Vermont.
- Modern Refrigeration and Air Conditioning, 21st Edition. ISBN: 978-1-63563-877-6. Goodheart-Wilcox Company, Inc., 18604 West Creek Dr., Tinley Park, IL 60477-6243. Available at www.g-w.com
- <u>NEC Notes</u>, 2023. Hand Written Notes.
- NFPA 70 National Electrical Code 2020, 2020. ISBN: 9781455922970. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. Available at www.nfpa.org.
- <u>Ugly's Electrical References</u>, 2020. ISBN: 978-1-284-19453-1. Jones and Bartlett Publishers, 40 Tall Pine Dr., Sudbury, ME 01776.
- <u>Vermont Statutes Title 26 Chapter 15</u>. State of Vermont. https://legislature.vermont.gov/statutes/fullchapter/26/015

Vermont Commerical Fire Alarm

A Vermont licensed Type-S Journeyman electrician for Commercial Fire Alarm is entitled to perform specialty electrical installations after completing an accredited training and experience program recognized by the board; or having acceptable training and experience. The licensed person must pass a separate exam in the specialty selected, Commercial Fire Alarm.

| Number of Questions | 55 |
|----------------------|-----|
| Time allowed (hours) | 2.5 |

| Subject Area | # Quest. |
|--|----------|
| General Electrical Knowledge | 6 |
| Installation Requirements Electrical | 6 |
| Initiating Devices | 5 |
| Notification Appliances & Signaling Circuits | 12 |
| Systems Testing | 12 |
| Supervisory Stations | 9 |
| Local Amendments | 5 |

References

- 2015 Vermont Fire and Building Safety Code, 2015. State of Vermont. https://firesafety.vermont.gov/buildingcode
- 2020 State of Vermont Electrical Safety Rules, 2020. State of Vermont.
- <u>International Building Code 2018 OR 2021</u>, 2018 OR 2021. International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478. www.iccsafe.org
- NFPA 101- Life Safety Code Handbook, 2015. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. https://catalog.nfpa.org
- NFPA 70 National Electrical Code 2020, 2020. ISBN: 9781455922970. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. Available at www.nfpa.org.
- NFPA 72 National Fire Alarm and Signaling Code, 2013. ISBN: 978-145590411-2. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. Available at www.nfpa.org.
- <u>Ugly's Electrical References</u>, 2020. ISBN: 978-1-284-19453-1. Jones and Bartlett Publishers, 40 Tall Pine Dr., Sudbury, ME 01776.
- <u>Vermont Statutes Title 26 Chapter 15</u>. State of Vermont. https://legislature.vermont.gov/statutes/fullchapter/26/015

Vermont Electric Lock Installation

A Vermont licensed Type-S Journeyman electrician for Electric Lock Installation is entitled to perform specialty electrical installations after completing an accredited training and experience program recognized by the board; or having acceptable training and experience. The licensed person must pass a separate exam in the specialty selected, Electric Lock Installation.

| Number of Questions | 35 |
|----------------------|-----|
| Time allowed (hours) | 1.5 |

| Subject Area | # Quest. |
|------------------------------|----------|
| General Electrical Knowledge | 5 |
| Wiring Methods & Materials | 8 |
| Wiring & Protection | 4 |
| Special Conditions | 10 |
| Egress | 5 |
| Local Amendments | 3 |

References

- 2020 State of Vermont Electrical Safety Rules, 2020. State of Vermont.
- **NEC Notes**, 2023. Hand Written Notes.
- NFPA 101- Life Safety Code Handbook, 2015. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. https://catalog.nfpa.org
- NFPA 70 National Electrical Code 2020, 2020. ISBN: 9781455922970. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. Available at www.nfpa.org.
- <u>Uglv's Electrical References</u>, 2020. ISBN: 978-1-284-19453-1. Jones and Bartlett Publishers, 40 Tall Pine Dr., Sudbury, ME 01776.
- Vermont Statutes Title 26 Chapter 15. State of Vermont. https://legislature.vermont.gov/statutes/fullchapter/26/015

Vermont Electric Lock Installation

(Spanish)

A Vermont licensed Type-S Journeyman electrician for Electric Lock Installation is entitled to perform specialty electrical installations after completing an accredited training and experience program recognized by the board; or having acceptable training and experience. The licensed person must pass a separate exam in the specialty selected, Electric Lock Installation.

| Number of Questions | 35 |
|----------------------|-----|
| Time allowed (hours) | 1.5 |

| Subject Area | # Quest. |
|------------------------------|----------|
| General Electrical Knowledge | 5 |
| Wiring Methods & Materials | 8 |
| Wiring & Protection | 4 |
| Special Conditions | 10 |
| Egress | 5 |
| Local Amendments | 3 |

References

- 2020 State of Vermont Electrical Safety Rules, 2020. State of Vermont.
- NEC Notes, 2023. Hand Written Notes.
- NFPA 101- Life Safety Code Handbook, 2015. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. https://catalog.nfpa.org
- NFPA 70 National Electrical Code 2020, 2020. ISBN: 9781455922970. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. Available at www.nfpa.org.
- <u>Uglv's Electrical References</u>, 2020. ISBN: 978-1-284-19453-1. Jones and Bartlett Publishers, 40 Tall Pine Dr., Sudbury, ME 01776.
- <u>Vermont Statutes Title 26 Chapter 15.</u> State of Vermont. https://legislature.vermont.gov/statutes/fullchapter/26/015

Vermont Electrical Well Pumps

A Vermont licensed Type-S Journeyman electrician for Electrical Well Pumps is entitled to perform specialty electrical installations after completing an accredited training and experience program recognized by the board; or having acceptable training and experience. The licensed person must pass a separate exam in the specialty selected, Electrical Well Pumps.

| Number of Questions | 40 |
|----------------------|----|
| Time allowed (hours) | 2 |

| Subject Area | # Quest. |
|------------------------------|----------|
| General Electrical Knowledge | 6 |
| Wiring & Protection | 13 |
| Wiring Methods & Materials | 6 |
| Motors & Controls | 12 |
| Local Amendments | 3 |

References

- 2020 State of Vermont Electrical Safety Rules, 2020. State of Vermont.
- NEC Notes, 2023. Hand Written Notes.
- NFPA 70 National Electrical Code 2020, 2020. ISBN: 9781455922970. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. Available at www.nfpa.org.
- <u>Ugly's Electrical References</u>, 2020. ISBN: 978-1-284-19453-1. Jones and Bartlett Publishers, 40 Tall Pine Dr., Sudbury, ME 01776.

Vermont Elevator Mechanic

A Vermont licensed Type-S Journeyman electrician for Elevator Mechanic is entitled to perform specialty electrical installations after completing an accredited training and experience program recognized by the board; or having acceptable training and experience. The licensed person must pass a separate exam in the specialty selected, Elevator Mechanic

| Number of Questions | 80 |
|----------------------|----|
| Time allowed (hours) | 2 |

| Subject Area | # Quest. |
|--------------------------------------|----------|
| Machine Room | 6 |
| Assemble Hoistway Equipment Cars and | 14 |
| Platforms | |
| Hydraulics | 7 |
| Electrical Materials & Installation | 7 |
| Testing | 7 |
| Escalators | 7 |
| Maintenance and Repair | 15 |
| Safety | 6 |
| Lifts | 3 |
| LULA | 2 |
| Local Amendments | 6 |
| | |

- 2014 State of Vermont Elevator Safety Rules, 2014. State of Vermont. https://firesafety.vermont.gov
- ASME A17.1 Safety Code for Elevators and Escalators (2016), 2016.
 American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016-5990. Available at www.ASME.org
- ASME A17.3-11 Safety Code for Existing Elevators and Escalators, 2011.
 ISBN: 978-0-7918-3359-9. American Society of Mechanical Engineers,
 Three Park Avenue, New York, NY 10016-5990. Available at http://www.asme.org/shop/.
- Elevator Industry Field Employees' Safety Handbook, 2010. National Elevators Industry Inc.. https://www.qualityelevator.com/assets/1/6/Complete_Safety_Handbook.pdf
- **LULA.** State of Vermont. https://www.garaventalift.com/dsgn/LULA-Elevator-DP-Guide.pdf?time=1571925373666
- NEC Notes, 2023. Hand Written Notes.
- NFPA 70 National Electrical Code 2020, 2020. ISBN: 9781455922970. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. Available at www.nfpa.org.
- <u>Vermont Statutes Title 26 Chapter 15.</u> State of Vermont. https://legislature.vermont.gov/statutes/fullchapter/26/015

Vermont Farm Equipment

A Vermont licensed Type-S Journeyman electrician for Farm Equipment is entitled to perform specialty electrical installations after completing an accredited training and experience program recognized by the board; or having acceptable training and experience. The licensed person must pass a separate exam in the specialty selected, Farm Equipment.

| Number of Questions | 35 |
|----------------------|----|
| Time allowed (hours) | 2 |

| Subject Area | # Quest. |
|------------------------------|----------|
| General Electrical Knowledge | 11 |
| Wiring & Protection | 5 |
| Wiring Methods & Materials | 6 |
| Motors & Controls | 6 |
| Equipment for General Use | 7 |

References

- American Electrician's Handbook, 17th Edition. ISBN: 978-1260457919.
 McGraw Hill Publishing Inc., P.O. Box 182604, Columbus, OH 43272.
 Available at https://www.mhprofessional.com/american-electricians-handbook-seventeenth-edition-9781260457919-usa
- NEC Notes, 2023. Hand Written Notes.
- NFPA 70 National Electrical Code 2020, 2020. ISBN: 9781455922970. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. Available at www.nfpa.org.

Vermont Gas Pump Installation and

Bulk Plant Works

A Vermont licensed Type-S Journeyman electrician for Gas Pump Installation and Bulk Plant Works is entitled to perform specialty electrical installations after completing an accredited training and experience program recognized by the board; or having acceptable training and experience. The licensed person must pass a separate exam in the specialty selected, Gas Pump Installation and Bulk Plant Works.

| Number of Questions | 55 |
|----------------------|-----|
| Time allowed (hours) | 2.5 |

| Subject Area | # Quest. |
|------------------------------|----------|
| General Electrical Knowledge | 5 |
| Wiring Methods & Materials | 14 |
| Wiring & Protection | 9 |
| Motors & Controls | 10 |
| Special Occupancies | 13 |
| Local Amendments | 4 |

- 202<u>0 State of Vermont Electrical Safety Rules</u>, 2020. State of Vermont.
- NFPA 70 National Electrical Code 2020, 2020. ISBN: 9781455922970. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. Available at www.nfpa.org.
- Ugly's Electrical References, 2020. ISBN: 978-1-284-19453-1. Jones and Bartlett Publishers, 40 Tall Pine Dr., Sudbury, ME 01776.
- <u>Vermont Statutes Title 26 Chapter 15.</u> State of Vermont. https://legislature.vermont.gov/statutes/fullchapter/26/015

Vermont Journeyman Electrician

A Vermont licensed journeyman electrician is entitled to perform electrical installations under the direction of a master electrician, and may supervise an apprentice electrician or an electrician's helper employed by a master electrician under the master electrician's direction.

| Number of Questions | 90 |
|----------------------|----|
| Time allowed (hours) | 4 |

| Subject Area | # Quest. |
|--|----------|
| General Electrical Theory & Principles | 7 |
| Wiring & Protection | 30 |
| Wiring Methods & Materials | 20 |
| Motors & Controls | 3 |
| Equipment for General Use | 15 |
| Special Occupancies | 4 |
| Special Equipment | 3 |
| Special Conditions | 3 |
| Local Amendments | 5 |

- 2020 State of Vermont Electrical Safety Rules, 2020. State of Vermont.
- <u>NEC Notes</u>, 2023. Hand Written Notes.
- NFPA 70 National Electrical Code 2020, 2020. ISBN: 9781455922970. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. Available at www.nfpa.org.
- <u>Ugly's Electrical References</u>, 2020. ISBN: 978-1-284-19453-1. Jones and Bartlett Publishers, 40 Tall Pine Dr., Sudbury, ME 01776.
- Vermont Statutes Title 26 Chapter 15. State of Vermont. https://legislature.vermont.gov/statutes/fullchapter/26/015

Vermont Journeyman Electrician

(Spanish)

A Vermont licensed journeyman electrician is entitled to perform electrical installations under the direction of a master electrician, and may supervise an apprentice electrician or an electrician's helper employed by a master electrician under the master electrician's direction.

| Number of Questions | 90 |
|----------------------|----|
| Time allowed (hours) | 4 |

| Subject Area | # Quest. |
|--|----------|
| General Electrical Theory & Principles | 7 |
| Wiring & Protection | 30 |
| Wiring Methods & Materials | 20 |
| Motors & Controls | 3 |
| Equipment for General Use | 15 |
| Special Occupancies | 4 |
| Special Equipment | 3 |
| Special Conditions | 3 |
| Local Amendments | 5 |
| | |

References

- 2020 State of Vermont Electrical Safety Rules, 2020. State of Vermont.
- **NEC Notes**, 2023. Hand Written Notes.
- NFPA 70 National Electrical Code 2020, 2020. ISBN: 9781455922970. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. Available at www.nfpa.org.
- <u>Uglv's Electrical References</u>, 2020. ISBN: 978-1-284-19453-1. Jones and Bartlett Publishers, 40 Tall Pine Dr., Sudbury, ME 01776.
- <u>Vermont Statutes Title 26 Chapter 15.</u> State of Vermont. https://legislature.vermont.gov/statutes/fullchapter/26/015

Vermont Journeyman Plumber

Perform work under the supervision and in the employ of a state certified plumber or a locally licensed master plumber.

| Number of Questions | 80 |
|----------------------|----|
| Time allowed (hours) | 3 |

| Subject Area | # Quest. |
|--|--------------------|
| General Knowledge & Plumbing Math | 8 |
| Fixtures & Fittings | 5 |
| Water Heaters | 5 |
| Water Supply and Distribution | 8 |
| Sanitary Drainage & Indirect/Special Waste | 15 |
| Vents & Vent Systems | 14 |
| Traps, Interceptors & Separators | 5 |
| Storm & Roof Drainage | 5 |
| Plan Reading & Isometrics | 10 |
| Safety | 5 |
| Sanitary Drainage & Indirect/Special Waste Vents & Vent Systems Traps, Interceptors & Separators Storm & Roof Drainage Plan Reading & Isometrics | 15 14 5 5 |

2021 State of Vermont Plumbing Rules, 2021. State of Vermont. https://firesafety.vermont.gov/document/2021-ipc-vt-plumbing-rules

- Basic Safety, 2015. ISBN: 0-13-412901-6. NCCER MATS Testing, 13614
 Progress Blvd, Alachua, FL 32615. Available at http://nccer.pearsonconstructionbooks.com
- International Plumbing Code 2021, 2021. ISBN: 978-1609839628. International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478.

Vermont Lift Mechanic

A Vermont licensed Type-S Journeyman electrician for Lift Mechanic is entitled to perform specialty electrical installations after completing an accredited training and experience program recognized by the board; or having acceptable training and experience. The licensed person must pass a separate exam in the specialty selected, Lift Mechanic

| Number of Questions | 45 |
|----------------------|----|
| Time allowed (hours) | 2 |

| Subject Area | # Quest. |
|-------------------------------------|----------|
| Vertical Platform Lifts | 13 |
| Inclined Platform Lifts | 8 |
| Inclined Stairway Chair Lifts | 4 |
| Electrical Materials & Installation | 6 |
| Inspections and Tests | 4 |
| Safety | 5 |
| Local Amendments | 5 |

- 2014 State of Vermont Elevator Safety Rules, 2014. State of Vermont. https://firesafety.vermont.gov
- Elevator Industry Field Employees' Safety Handbook, 2010. National Elevators Industry Inc.. https://www.qualityelevator.com/assets/1/6/Complete_Safety_Handbook.pdf
- **NEC Notes**, 2023. Hand Written Notes.
- NFPA 70 National Electrical Code 2020, 2020. ISBN: 9781455922970. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. Available at www.nfpa.org.
- <u>Vermont Statutes Title 26 Chapter 15.</u> State of Vermont. https://legislature.vermont.gov/statutes/fullchapter/26/015

Vermont Lightning Rod Installations

A Vermont licensed Type-S Journeyman electrician for Lightning Rod Installations is entitled to perform specialty electrical installations after completing an accredited training and experience program recognized by the board; or having acceptable training and experience. The licensed person must pass a separate exam in the specialty selected, Lightning Rod Installations.

Number of Questions 35 Time allowed (hours) 2

| Subject Area | # Quest |
|------------------------------|---------|
| General Electrical Knowledge | - |
| Hazardous Structures | |
| Heavy Duty Stacks | 4 |
| Ordinary Structures | 7 |
| Safety | |
| Special Occupancies | 2 |
| Wind Turbines and Watercraft | 3 |
| Special Equipment | 4 |
| | |

References

- American Electrician's Handbook, 17th Edition. ISBN: 978-1260457919.
 McGraw Hill Publishing Inc., P.O. Box 182604, Columbus, OH 43272.
 Available at https://www.mhprofessional.com/american-electricians-handbook-seventeenth-edition-9781260457919-usa
- **NEC Notes**, 2023. Hand Written Notes.
- NFPA 70 National Electrical Code 2020, 2020. ISBN: 9781455922970. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. Available at www.nfpa.org.
- NFPA 780 Standard for the Installation of Lightning Protection Systems,
 2011. National Fire Protection Association, 1 Batterymarch Park,
 Quincy, MA 02169-7471. Available at www.nfpa.org.

Vermont Master Electrician

A Vermont licensed master electrician is entitled to design, install, repair, maintain, and replace electrical installations including lightning rods, fire alarms, fire detection systems and may employ other persons licensed under Vermont licensing statues or electrician's helpers to perform work in connection with electrical installations under his or her direction.

| Number of Questions | 105 |
|----------------------|-----|
| Time allowed (hours) | 5 |

| Subject Area | # Quest. |
|------------------------------|----------|
| Equipment for General Use | 10 |
| General Electrical Knowledge | 12 |
| Motors & Controls | 11 |
| Special Conditions | 4 |
| Special Equipment | 4 |
| Special Occupancies | 4 |
| Wiring & Protection | 34 |
| Wiring Methods & Materials | 21 |
| Local Amendments | 5 |

References

- 2020 State of Vermont Electrical Safety Rules, 2020. State of Vermont.
- NFPA 70 National Electrical Code 2020, 2020. ISBN: 9781455922970. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. Available at www.nfpa.org.
- <u>Ugly's Electrical References</u>, 2020. ISBN: 978-1-284-19453-1. Jones and Bartlett Publishers, 40 Tall Pine Dr., Sudbury, ME 01776.
- Vermont Statutes Title 26 Chapter 15. State of Vermont. https://legislature.vermont.gov/statutes/fullchapter/26/015

Vermont Master Plumber

Those who have the knowledge and skill to install, maintain, repair, alter or extend plumbing, sanitary drainage or storm drainage facilities, venting systems, public and private water supply systems, septic tanks, drainage and supply wells, swimming pool piping; irrigation systems; or solar heating water systems and all appurtenances, apparatus, or equipment used in connection therewith, including boilers and pressure process piping and including the installation of water and storm and sewer lines, water and sewer plants and substations.

| Number of Questions | 97 |
|----------------------|----|
| Time allowed (hours) | 3 |

| Subject Area | # Quest. |
|--|----------|
| General Knowledge & Plumbing Math | 11 |
| Fixtures & Fittings | 6 |
| Water Heaters | 6 |
| Water Supply and Distribution | 12 |
| Sanitary Drainage & Indirect/Special Waste | 16 |
| Vents & Vent Systems | 16 |
| Traps, Interceptors & Separators | 4 |
| Storm & Roof Drainage | 6 |
| Plan Reading & Isometrics | 12 |
| Safety | 8 |

- 2021 State of Vermont Plumbing Rules, 2021. State of Vermont. https://firesafety.vermont.gov/document/2021-ipc-vt-plumbing-rules
- Basic Safety. ISBN: 9781323676189. Prentice Hall, P.O. Box 11071, Des Moines, IA 50336. Available at www.provbookstore.com.
- International Plumbing Code 2021, 2021. ISBN: 978-1609839628. International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478.

Vermont Outdoor Advertising

A Vermont licensed Type-S Journeyman electrician for Outdoor Advertising is entitled to perform specialty electrical installations after completing an accredited training and experience program recognized by the board; or having acceptable training and experience. The licensed person must pass a separate exam in the specialty selected, Outdoor Advertising

| Number of Questions | 35 |
|----------------------|----|
| Time allowed (hours) | 2 |

| Subject Area | # Quest. |
|-------------------------------------|----------|
| Basic Electricity & Wiring | 4 |
| Electrical Signs & Outline Lighting | 14 |
| Grounding & Bonding | 4 |
| Motors & Controls | 3 |
| Transformers | 3 |
| Wiring & Protection | 3 |
| Wiring Methods & Materials | 4 |

References

- American Electrician's Handbook, 17th Edition. ISBN: 978-1260457919.
 McGraw Hill Publishing Inc., P.O. Box 182604, Columbus, OH 43272.
 Available at https://www.mhprofessional.com/american-electricians-handbook-seventeenth-edition-9781260457919-usa
- NFPA 70 National Electrical Code 2020, 2020. ISBN: 9781455922970. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. Available at www.nfpa.org.

Vermont Refrigeration and Air

Conditioning Electrical

A Vermont licensed Type-S Journeyman electrician for Refrigeration and Air Conditioning Electrical is entitled to perform specialty electrical installations after completing an accredited training and experience program recognized by the board; or having acceptable training and experience. The licensed person must pass a separate exam in the specialty selected, Refrigeration and Air Conditioning Electrical.

| Number of Questions | 35 |
|----------------------|-----|
| Time allowed (hours) | 1.5 |

| Subject Area | # Quest. |
|------------------------------|----------|
| General Electrical Knowledge | 10 |
| Motors & Controls | 17 |
| Low Voltage | 5 |
| Local Amendments | 3 |

References

- 2020 State of Vermont Electrical Safety Rules, 2020. State of Vermont.
- Modern Refrigeration and Air Conditioning, 20th Edition. ISBN: 1631263544. Goodheart-Wilcox Company, Inc., 18604 West Creek Dr., Tinley Park, IL 60477-6243. Available @ www.g-w.com
- **NEC Notes**, 2023. Hand Written Notes.
- NFPA 70 National Electrical Code 2020, 2020. ISBN: 9781455922970. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. Available at www.nfpa.org.
- <u>Ugly's Electrical References</u>, 2020. ISBN: 978-1-284-19453-1. Jones and Bartlett Publishers, 40 Tall Pine Dr., Sudbury, ME 01776.

Vermont Solar Photovoltaic Installation

Electrician

A Vermont licensed Type-S Journeyman electrician for Solar Photovoltaic Installation is entitled to perform specialty electrical installations after completing an accredited training and experience program recognized by the board; or having acceptable training and experience. The licensed person must pass a separate exam in the specialty selected, Solar Photovoltaic Installation.

| Number of Questions | 30 |
|----------------------|----|
| Time allowed (hours) | 1 |

| Subjec | t Area | | | # Quest. |
|--|--------------|--------|-------------|----------|
| General Electrical Knowledge | | | | 6 |
| Solar Energy and Photovoltaic Fundamentals and | | | | 9 |
| Safety | | | | |
| Solar | Photovoltaic | System | Components, | 8 |
| Equipment, and Grounding | | | | |
| Solar Photovoltaic System Conductors, Methods, | | | | 7 |
| and M | aterials | | | |

- **NEC Notes**, 2023. Hand Written Notes.
- NFPA 70 National Electrical Code 2020, 2020. ISBN: 9781455922970. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. Available at www.nfpa.org.
- Photovoltaic Power Systems, 3rd. ISBN: 978-1890659813. International Association of Electrical Inspectors, 901 Waterfall Way, Suite 602, Richardson, TX 75080. https://www.iaei.org

SAMPLE TEST QUESTIONS

The following are sample questions that reflect the format and style of the questions found on exams.

- The bonding conductor used to connect the bonding grid on a swimming pool shall NOT be smaller than a solid #
 - a. 10 AWG.
 - b. 8 AWG.
 - c. 6 AWG.
 - d. 4 AWG.
- 2. What does the alpha character I represent when stating the equation P = E x I?
 - a. Intrinsic circuit
 - b. Intrinsic electromotive force
 - c. Intensity of current
 - d. Isotopic character
- 3. If 15 amp circuits were used, the NEC would require a 2000 square foot house to have a MINIMUM of how many branch circuits?
 - a. 2
 - b. 3
 - c. 4
 - d. 5
- Equipment that is electrically connected to a telecommunications network is required to be listed in accordance with section _____ of the NEC.
 - a. 110.16
 - b. 240.6
 - c. 800.18
 - d. Chapter 9, Table 5(A)
- A required emergency standby generator that utilizes an internal combustion engine as the "prime mover" is required to have sufficient fuel supply on premises to operate for a period of NOT less than ____ hours at full demand operation of the system.
 - a. 24
 - b. 12
 - c. 8
 - d. 2
- 6. Which section of the NEC determines the installation of service equipment on manufactured buildings?

- a. 230.60
- b. 230.70
- c. 240.6
- d. 250.66
- 7. The MAXIMUM ampacity of an individual branch circuit using type FCC cable is
 - a. 15 amps.
 - b. 20 amps.
 - c. 30 amps.
 - d. 50 amps.
- 8. The MINIMUM service demand for 10-8 kW ranges in an apartment complex would be
 - a. 80 kW.
 - b. 27.2 kW.
 - c. 25 kW.
 - d. 16 kW.

Answers to Sample Questions

- 1. **B** 8 AWG.
- 2. **C** Intensity of current
- 3. **C**-4
- 4. **C** 800.18
- 5. **D** 2.
- 6. **B** 230.70.
- 7. **C** 30 amps
- 8. C 25 kW

TEST SITE INSTRUCTIONS

Written test site instructions are attached to this document that outline testing rules and computer testing navigation information that is very important. Please thoroughly review prior to your scheduled test date.

Prov Candidate Instructions Handout

Please take a moment to read the following information (front and back). If you have any questions then please let your proctor know. Failure to follow these testing rules can have serious consequences.

Be advised, the testing center and testing room may be under video surveillance.

Testing Rules

- Be courteous and do not disturb others.
- After you are seated, follow all the instructions given and verify the information presented to you. This information will include your name, candidate ID, exam name, and occasionally additional testing Materials such as graphics.
- If you leave the testing room during the test, you must notify your proctor and turn in all your testing materials.
- If you take a restroom break the test time will continue to countdown and the lost time cannot be recovered.
- If your computer freezes, shuts down, or will not move to the next question notify your proctor immediately and they will be able to restart your exam without loss of available testing time.
- At the end of your test, remain seated, raise your hand and wait for the proctor to start the check-out process with you. Once all testing materials have been accounted for by your proctor, you may collect your belongings and leave the testing center.
- If permitted by your jurisdiction, you will receive your testing results today; otherwise, you'll be notified of your testing results by either Prov or your licensing jurisdiction.



Reference Rules for Open Book Exams

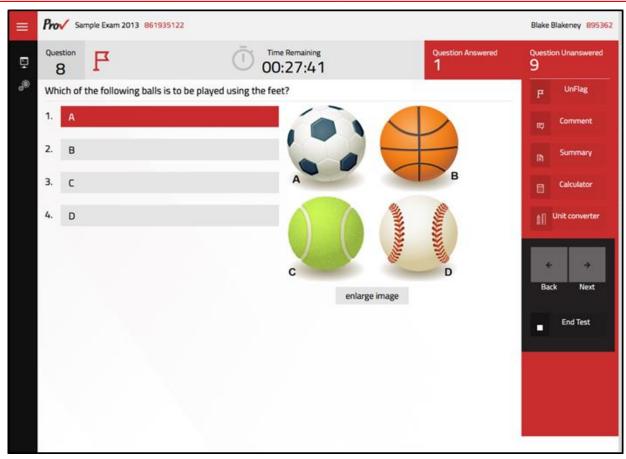
- Book title must be exact. *Exceptions:* Older/new editions are always permitted. Substitutes are allowed if listed in the Exam Details.
- Photocopied versions of a reference book are ONLY permitted when stated in the Exam Details.
- Permanent tabs such as gummed tabs, self-adhesive tabs with printable inserts, or insertable tab dividers (for three ring binders only) are permitted.
- Moveable items such as repositionable tabs or Postit notes are NOT permitted in a reference book.
- Books can have highlighting and underlining in pen only, however you cannot mark in your books during the test.
- Handwritten notes are NOT allowed in any portion of a reference book unless authorized by your licensing or certifying jurisdiction.
- Other documents (such as formula sheets or the Tom Henry and Kelly Indexes) or stickers (such as Ohm's Law) CANNOT be added, glued or taped to a reference book.

Unethical behavior

Individuals caught giving or receiving assistance during or after the examination, or caught using unauthorized materials during the examination will be reported to the Board. Those caught in the act of cheating will be dismissed from the examination and their testing results will be frozen. Furthermore, the candidate will forfeit the examination fees paid. Finally, anyone caught with test questions in their possession, either during or following the examination will be prosecuted by Prov for theft of copyrighted testing materials.

In the next few days, Prov will email you a link to our candidate experience survey, please let us know how we did!

Computer Testing Navigation



| Total number of questions | Indicated in the upper right-hand corner of the screen. | | |
|--------------------------------|---|--|--|
| Available time | Posted in hours and minutes. The test will end automatically when Time Remaining reaches 0:00. | | |
| Selecting your answer | Use your mouse to select a number (1, 2, 3, or 4). The answer is highlighted (or checked) when selected. You may change your selected answer for any question until the test is over. If you do not know the answer to a question, it is to your advantage to guess, since there is no penalty for a wrong answer. | | |
| Tracking difficult questions | Press the Flag Button to help you keep track of questions you wish to return to at a later time. Flagging questions has no impact in scoring. Press the button again to Unflag the question. You may see which questions have been flagged by clicking Summary . | | |
| Question comments | During the assessment, you may find that you have a question or concern about a particular test question. The proctor cannot answer questions about test content at any time; however, you can send a comment to Prov's Test Development Department by clicking the Comment button. Please leave a specific description. Staff will process your comments/questions within two weeks. You can refer to your candidate information bulletin for more information on how comments are processed. | | |
| Moving to a different question | Use your mouse to select the Next or Back buttons. Press Next to move forward. Press Back to move backward. You may also use your arrow keys (\leftarrow \rightarrow) to move forward and backward through the test. | | |
| Reviewing your progress | Press the Summary button to see a table indicating which questions are unanswered or which you have flagged. | | |
| Ending the test early | Press End Test button when you are ready to leave the test. It is recommended that you review your exam and verify there are no unanswered questions prior to ending the test. | | |