

CITY OF DETROIT
ELECTRICAL LICENSING
PROCEDURES



ELECTRICAL INSPECTION DIVISION
COLEMAN A. YOUNG MUNICIPAL CENTER
2 WOODWARD AVE.
FOURTH FLOOR, ROOM 408
DETROIT, MI 48226
(313) 224-3228 OR (313) 628-2661

PART I – DEFINITIONS

Apprentice Electrician – an individual other than an Electrical Contractor, Master Electrician, or Electrical Journeyman, who is engaged in learning about and assisting in the installation or alteration of electrical wiring and equipment under the direct supervision of an Electrical Journeyman or Master Electrician.

Board of Electrical Examiners, The – the Electrical Administrative Board created pursuant to City of Detroit Ordinance 604-H.

Electrical Contractor – a person, firm, or corporation engaged in the business of erecting, installing, altering, repairing, servicing, or maintaining electric wiring, devices, appliances, or equipment.

Electrical Journeyman – a person other than an Electrical Contractor who, as his or her principal occupation, is engaged in the practical installation or alteration of electric wiring. An Electrical Contractor or Master Electrician may also be an Electrical Journeyman.

Fire Alarm Contractor – a person, firm, or corporation engaged in the business of erecting, installing, altering, repairing, servicing, or maintaining wiring, devices, appliances, or equipment of a fire system.

Fire Alarm Apprentice Specialty Technician – an individual other than a fire alarm contractor or a fire alarm specialty technician who is engaged in learning about and assisting in the installation or alteration of fire alarm system wiring and equipment under the direct supervision of a Fire Alarm Specialty Technician.

Fire Alarm Specialty Technician – an individual other than a fire alarm contractor who, as his or her principal occupation, is engaged in the practical installation or alteration of fire alarm system wiring.

Master Electrician – a person having the necessary qualifications, training, experience, and technical knowledge to supervise the installation of electrical wiring and equipment in accordance with the standard rules and regulations governing that work.

Sign Specialist – a person who, as his or her principal occupation, is engaged in the installation, alteration, or repair of electric signs.

Sign Specialty Contractor – a person, firm, or corporation engaged in the business of manufacturing, installing, maintaining, connecting, or repairing electric sign wiring or devices, including wiring that is directly related to electric signs and is electrically dedicated as a sign circuit.

Reference: State of Michigan Electrical Administrative Act (Act 217 of 1956)

PART II – TRADE LICENSES AND APPRENTICE REGISTRATIONS**ELECTRICAL APPRENTICE REGISTRATION**

EFFECTIVE SEPTEMBER 1, 2010 ALL ELECTRICAL APPRENTICES ARE REQUIRED TO BE PARTICIPATING IN AN ELECTRICAL TRAINING PROGRAM APPROVED BY THE ELECTRICAL ADMINISTRATIVE BOARD AS STIPULATED IN 1956 PA 217. FAILURE TO DO SO INVALIDATES THE REGISTRATION. ANY HOURS ACCUMULATED ON AN INVALID REGISTRATION WILL NOT BE CREDITED TOWARDS THE JOURNEYMAN ELECTRICIAN EXAMINATION.

All apprentices are required to register in the municipality that they reside within 30 days after employment. The expiration date for the apprentice registration is August 31st of every year. In addition, electrical apprentices must:

- * Be a Detroit resident and show proof of residency.
- * Submit a letter of documentation from your current employer attesting to employment related to electrical construction or maintenance of buildings or electrical wiring or equipment under the direct supervision of a person licensed under the State of Michigan Electrical Administrative Act (Act 217 of 1956). All letters must be: originals, notarized, on company letterhead, include a brief description of your duties, and be signed by the employer. **Paycheck stubs are not considered valid documentation.**
- * Submit documentation as participating in a bona fide Apprentice Training Program approved by the Board documenting a minimum of 144 hours for each academic year.
- * Complete an application form. A passport size picture shall be attached in the upper right hand corner of each application with the exception of applications for renewal when a registration form with a picture is on file.
- * Pay the \$15.00 registration fee.

If you employ a teenager as an Apprentice, it is important to be aware of the laws that outline what teenagers can and cannot do, minimum wage standards, work hours, and break requirements. For more information regarding employing a teenager, read the *Teenager's Guide to Employment in Michigan* pamphlet available on the Department of Energy, Labor, and Economic Growth's Wage and Hour Division web site at:

http://www.michigan.gov/documents/Teenagers_Guide_89278_7.pdf

Or contact the Wage and Hour Division by writing to:

DELEG-Wage and Hour Division
7150 Harris Drive, First Floor, A-Wing
P.O. Box 30476
Lansing, MI 48909-7976
Telephone No. 517-322-1825

The City of Detroit Board of Electrical Examiners is required to review and approve all Apprentice Registrations prior to issuance. The Board normally meets on the third Thursday of the month.

FIRE ALARM SPECIALTY APPRENTICE REGISTRATION

EFFECTIVE SEPTEMBER 1, 2010 ALL ELECTRICAL APPRENTICES ARE REQUIRED TO BE PARTICIPATING IN AN ELECTRICAL TRAINING PROGRAM APPROVED BY THE ELECTRICAL ADMINISTRATIVE BOARD AS STIPULATED IN 1956 PA 217. FAILURE TO DO SO INVALIDATES THE REGISTRATION. ANY HOURS ACCUMULATED ON AN INVALID REGISTRATION WILL NOT BE CREDITED TOWARDS THE JOURNEYMAN ELECTRICIAN EXAMINATION.

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QUALIFICATION FOR JOURNEYMAN ELECTRICIAN LICENSE

EFFECTIVE SEPTEMBER 1, 2010 ALL APPLICANTS FOR JOURNEYMAN ELECTRICIAN LICENSE ARE REQUIRED TO PARTICIPATE IN AN ELECTRICAL TRAINING PROGRAM APPROVED BY THE ELECTRICAL ADMINISTRATIVE BOARD AS STIPULATED IN 1956 PA 217. FAILURE TO DO SO INVALIDATES THE APPRENTICE REGISTRATION(S). ANY HOURS ACCUMULATED ON AN INVALID REGISTRATION(S) WILL NOT BE CREDITED TOWARDS THE JOURNEYMAN ELECTRICIAN EXAMINATION.

- * Must be at least 20 years of age.
- * Must be a Detroit resident and show proof of residency.
- * Have a current Electrical Apprentice Registration form on file. Applicants shall show proof of valid apprentice registration coinciding with the required 8,000 hours of practical experience obtained over a 4-year period.
- * Must complete an two (2) application forms, and submit a letter of documentation from your employer(s) attesting to not less than 8,000 hours of practical experience obtained over a period of not less than 4 years related to electrical construction or maintenance of buildings or electrical wiring or equipment under the direct supervision of a person licensed under the State of Michigan Electrical Administrative Act (Act 217 of 1956).

QUALIFICATION FOR MASTER ELECTRICIAN LICENSE

- * Must be at least 22 years of age.
- * Must be a Detroit resident and show proof of residency.
- * Must have held and maintained an electrical journeyman's license for not less than two years.
- * Must complete an two (2) application forms, and submit a letter of documentation from your employer(s) attesting to not less than 12,000 hours of practical experience obtained over a period of not less than six years related to electrical construction or maintenance of buildings or electrical wiring or equipment under the supervision of a Master Electrician licensed under the State of Michigan Electrical Administrative Act (Act 217 of 1956).

QUALIFICATION FOR SIGN SPECIALTY TECHNICIAN LICENSE

- *Must be at least 18 years of age.
- *Must be a Detroit resident and show proof of residency
- *Completion of a Sign Specialty Training course.
- * Must complete an two (2) application forms, and submit a letter of documentation from your employer(s) attesting to not less than 4,000 hours of practical experience obtained over a period of not less than 2 years related to the manufacture, installation, maintenance, connection, or repair of electric signs and related wiring as verified by a Contractor licensed under this act who is the current employer of the applicant. The hours of experience may be obtained by multiple employers, and equivalent education as determined by the Board may be substituted for work experience.

QUALIFICATION FOR FIRE ALARM SPECIALTY TECHNICIAN LICENSE

EFFECTIVE SEPTEMBER 1, 2010 ALL APPLICANTS FOR FIRE ALARM SPECIALTY TECHNICIAN (FAST) ARE REQUIRED TO PARTICIPATE IN AN ELECTRICAL TRAINING PROGRAM APPROVED BY THE ELECTRICAL ADMINISTRATIVE BOARD AS STIPULATED IN 1956 PA 217. FAILURE TO DO SO INVALIDATES THE FIRE ALARM APPRENTICE REGISTRATION(S). ANY HOURS ACCUMULATED ON AN INVALID REGISTRATION(S) WILL NOT BE CREDITED TOWARDS THE FIRE ALARM SPECIALTY TECHNICIAN EXAMINATION.

- * Must be at least 20 years of age.
- * Must be a Detroit resident and show proof of residency.
- * Certified by the National Institute for Engineering Technology (NICET) as an Associate of Engineering Technician, Level II, or the equivalent as determined by the Board, in the field of Fire Alarm Systems Technology.
- * Have a current Fire Alarm Apprentice Registration form on file. Applicants shall show proof of valid Apprentice Registration coinciding with the required 8,000 hours of practical experience obtained over a 4-year period.
- * Must complete an two (2) application forms, and submit a letter of documentation from your employer(s) attesting to not less than 8,000 hours of practical experience obtained over a period of not less than 4 years related to electrical construction or maintenance of buildings or electrical wiring or equipment under the direct supervision of a person licensed under the State of Michigan Electrical Administrative Act (Act 217 of 1956).

APPLICATION FORM

- * Complete application forms (Sections A, C, and 14). A passport size picture shall be attached in the upper right hand corner of each application. The applicant's signature in Section C must be notarized.

All applications for electrical licenses have to be approved by the Board of Electrical Examiners. The Board normally meets on the third Thursday of the month. Notification of approval or denial is given in writing after the Board meeting.

LETTERS OF DOCUMENTATION FOR LICENSE APPLICANTS

All letters must be: originals, notarized, on company letterhead, contain the starting and ending dates (month and year) of employment, the number of hours worked, a brief description of your experience or duties, contain the name, license number and the home municipality of the Master Electrician of record, and be signed by the employer. Do not include overtime hours in your accumulation of time from your employer (maximum credit of 2,000 hours per year).

Paycheck stubs are not considered valid documentation.

- *Credit may be approved for graduation from or attendance at a recognized training or educational program.

- *Educational experience documents must be presented for Board consideration in lieu of work experience.

ELECTRICAL AFFIDAVIT

The Electrical Division regularly receives questions on the applicability of licensing provisions regarding industrial, commercial, or institutional facilities that use their own employees to perform electrical installations or alterations to wiring systems, within their own buildings or properties. In addition, the Division receives applications for electrical examination from persons employed in those companies or facilities that do not have documented licensed supervision.

In the case of industrial, commercial, or institutional employment, the Affidavit and/or Owner's permit is used in lieu of an Electrical Contractor License. The signature of the Master Electrician on the Affidavit provides the licensing agency a means to verify the employment of licensed persons and letters of verification will bear the signature of the Master Electrician and the employer.

MILITARY EXPERIENCE

You must write to the American Council on Education, One DuPont Circle, Washington, DC 20036-1193 to request an Evaluation of Military Training and Occupations form (DD-2586) to submit with your application.

Applicants who desire credit for military experience must submit documentation of experience in electrical construction or electrical building maintenance. This experience can only be evaluated when you have submitted your documentation on the form noted above with your application.

PART III – SCHEDULING EXAMINATIONS & LICENSE ISSUE – GENERAL

Applicants for examination must schedule their examination in person, and pay the appropriate exam fee. The examination fees are listed below. Examinations are typically given twice a month, and are scheduled on a first come first serve basis. Scheduling is closed out after a date is filled, or 5 days prior to the examination date.

Contractor's Examinations (All – written)	\$63.00
Journeyman Electrician Examination (written)	\$55.00
Master Electrician Examination (written)	\$63.00

To cancel an examination, applicants shall notify the Electrical Division by phone or in person prior to the examination. **Examination fees will not be refunded, or applied to another examination date to applicants who do not cancel prior to the examination.**

RESCHEDULING AN EXAMINATION

If you do not pass your examination, the following waiting periods apply before the examination can be rescheduled.

- Three months from the date of examination if you score over 50% but less than 75%.
- Six months from the date of examination if you score less than 50%.
- If the examination is failed twice within a two-year period, there will be a **one year wait** from the date of the second examination. In addition, successful completion of a course on code, electrical fundamentals, or electrical theory approved by the Board of Electrical Examiners is required, in order for the applicant to become eligible again to sit for an examination.

ELECTRICAL LICENSE ISSUE

The City of Detroit Board of Electrical Examiners is required to review and approve the applications and results of all examinees. Examination results will be mailed after the Board meeting, normally the third Thursday of the month.

EXAMINATION RESULTS WILL NOT BE GIVEN BY TELEPHONE. Electrical licenses can be applied for in Room 408 of the Coleman A. Young Municipal Center upon receipt of letter of successful examination.

PART IV – MASTER/JOURNEYMAN EXAMINATION CONTENT DESCRIPTION

The **Electrical Journeyman** examination covers entry-level knowledge of the electrical industry as outlined in all categories listed below.

The **Master Electrician** examination covers additional knowledge required to plan and supervise electrical installations as outlined in all categories listed below.

I. Grounding and Bonding

Demonstrate knowledge of system and circuit grounding requirements, methods and location of grounding connections. Select proper size grounding conductors, bonding of enclosures, equipment and interior metal piping systems.

II. Branch Circuits, Wire Connections and Devices

Knowledge of circuit classifications, ratings, design, and use requirements. Knowledge and calculation of branch circuit loads. Application of code rules covering electrical outlets and devices, including wiring connectors and methods.

III. Conductors

Determine ampacity, type of insulation, usage requirements, methods of installation, protection, support and termination. Includes calculation of voltage drop and duration.

IV. General Knowledge of the Electrical Trade

Terminology and practical calculations such as power factor, voltage and current ratings of

V. Motors and Controls of Motors and Equipment

Knowledge of code rules governing installation of motors and controls. Includes calculations for motor feeder and branch circuits, short circuit, ground fault, and overload protection, and disconnecting means. Knowledge of all control circuits and motor type application and usage.

VI. Services and Feeders

Knowledge of code rules covering services. Calculation of electrical loads and determination of proper size, rating and type of service and feeder conductors.

VII. General use Equipment

Knowledge of code rules covering appliances, heating and air conditioning equipment, generators, transformers, etc.

VIII. Overcurrent Protection

Knowledge of application of fuses, circuit breakers and all types of protective devices for conductors and equipment. Includes rules on taps and splices.

IX. Raceways

Knowledge of all types of raceways and their uses. Determining proper size, conductor fill, support and methods of installation.

X. Special Occupancies and Equipment

Knowledge of code rules as they apply to hazardous locations, health care facilities, places of assembly, etc. Includes code rules on signs, welders, industrial machinery, swimming pools, etc.

XI. Boxes, Cabinets, Panelboards, Non-Raceway Enclosures

Application of proper type, use and support of boxes and cabinets, etc. Includes calculation of proper size and rating.

XII. Low Voltage Circuits and Equipment

Knowledge of circuits and equipment characterized by usage and electrical power limitations, which differentiate them from electric light and power circuits. Includes remote-control, signaling, and power limited circuits.

XIII. Lighting and Lamps

Knowledge of all types and applications of lighting fixtures, ratings, requirements for occupancies, special provisions, clearances, etc. Includes load calculations for lighting.

XIV. State Laws, Rules and Code Amendments

Knowledge of Act 217, of 1956, as amended (Electrical Administrative Act) and Act 230, of 1972, as amended (State Construction Code Act). The State Electrical Code (2002 National Electrical Code, and Part 8, Michigan amendments).

PART V – JOURNEYMAN/MASTER EXAMINATION FORMAT

All examinations are **open codebook**, based on Act 217, of 1956, as amended (Electrical Administrative Act), Act 230, of 1972, as amended (State Construction Code Act), and the State Electrical Code (2011 National Electrical Code, and Part 8, Michigan amendments). A 2011 NEC, the State Electrical Code, and Public Act 217 are provided to all applicants for the examination as required. Applicants are allowed to bring an unmarked 2011 NEC for use during the examination. Code books may include listed index tabs (**not homemade varieties**). **No markings will be allowed within the codebook.** This includes margin notes, test notes, highlighting, paper clips or other testing aids. **Handbooks are not allowed.** Applicants are allowed to bring a non-programmable calculator.

Applicants for examination are required to bring to the examination site, picture identification (current Driver's License preferred).

A score of 75% or better is required to pass the examination. If you do not pass, you **may not** review your examination. **EXAM RESULTS ARE NOT GIVEN OVER THE TELEPHONE.**

Electrical Journeyman Examination Format

The Journeyman Examination consist of 80 multiple choice questions worth 1.25 points each. It is an **open codebook** examination with a 2½ hour time limit.

Part I - Fundamentals and Practical Electricity.

20 problems, 1.25 points each.....total 25

Part II - Part 8 Rules.

10 questions, 1.25 points each.....total 12.5

Part III - National Electrical Code

50 questions, 1.25 points each.....total 62.5

Total points.....100

Master Electrician Examination Format

The Master Examination consist of 75 multiple choice questions worth 1.33 points each. It is an **open codebook** examination with a 3 hour time limit.

Part I - Public Act 217/Part 8 Rules.

15 problems, 1.33 points each.....total 20

Part II - National Electrical Code

30 questions, 1.33 points each.....total 40

Part III - Calculation Problem

15 questions, 1.33 points each.....total 20

Part IV - Electrical Theory and Concepts

15 questions, 1.33 points each.....total 20

Total points.....100

PART VI – CONTRACTORS EXAMINATIONS**QUALIFICATION FOR ELECTRICAL CONTRACTOR LICENSE**

- ✓ Must have a Detroit business address.
- ✓ Holds a Master Electrician's license or has not less than one Master Electrician residing in this state who is in his or her full-time employ. The Master Electrician shall be actively in charge of and responsible for code compliance of all installations of electrical wiring and equipment.
- ✓ Must complete two (2) application forms (Parts A, B and C as required).

QUALIFICATION FOR FIRE ALARM CONTRACTOR LICENSE

- ✓ Must have a Detroit business address.
- ✓ Holds a Fire Alarm Specialty Technician's license or has not less than one Fire Alarm Specialty Technician residing in this state who is in his or her full-time employ. The Fire Alarm Specialty Technician shall be actively in charge of and responsible for code compliance of all installations of fire alarm system wiring and equipment.
- ✓ Must complete two (2) application forms (Parts A, B and C as required).

QUALIFICATION FOR SIGN SPECIALTY CONTRACTOR LICENSE

- ✓ Must have a Detroit business address.
- ✓ Holds a Sign Specialist's license or has not less than one Sign Specialist residing in this state who is in his or her full-time employ. The Sign Specialist shall be actively in charge of and responsible for code compliance of all installations, maintenance, connection, and repair of electric signs and related wiring.
- ✓ Must complete two (2) application forms (Parts A, B and C as required).

APPLICATION FORM

Complete two (2) application forms (Sections A, B, and C). A passport size picture shall be attached in the upper right hand corner of each application. The applicant's signature in Sections B and C must be notarized.

CONTRACTOR'S EXAMINATION**Contractor's Examination Format**

All of the Contractor's Examination consists of 40 multiple choice questions worth 2.50 points each. It is an **open book** examination with a 1½ hour time limit and covers the below information.

Part I – Electrical Code Rules (Michigan Part 8 Rules)	
8 problems, 2.50 points each.....	total 20
Part II – Electrical Administrative Board General Rules	
8 problems, 2.50 points each.....	total 20
Part III – Electrical Administrative Act 217 of 1956	
8 problems, 2.50 points each.....	total 20
Part IV – Act 230 of 1972	
10 problems, 2.50 points each.....>.....	total 25
Part V – Act 497 of 1980 – Construction Lien Act	
6 problems, 2.50 points each.....>.....	total 15
Total points.....>.....	100

The Electrical Examiner will provide all of the above reference material at the examination. The examinee will not be allowed to bring their own. However, if you wish to preview the material, you can download it from the Internet using the information provided below.

GO TO: www.michigan.gov/bccfs

CHOOSE: **FORMS**

Scroll down to the Electrical Division:

Under related acts and rules you should print:

Act 217 of 1956

Act 230 of 1972

Act 497 of 1980 – Construction Lien Fund

Electrical Administrative Board General Rules

Electrical Code Rules (Michigan Part 8)