



Assessment Blueprint

House Wiring Advanced



8063- Online Version
8064- Paper/Pencil Version
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General Assessment Information

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Test Type: This Residential Construction Academy certification assessment is a customized assessment for the Home Builders Institute. This assessment measures technical skills at the occupational level and includes items which gauge factual and theoretical knowledge. This assessment offers both a written and performance component and can be used at the secondary level and post-secondary level. This assessment can be delivered in an online or paper/pencil format.

Revision Team: The assessment content is based on input from secondary, post-secondary, and business/industry representatives from the state of California, Florida, Maine, Minnesota, New York, South Carolina, Texas, and Virginia.



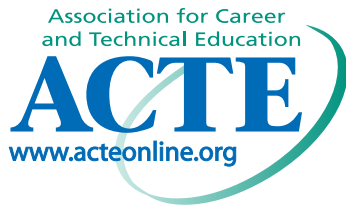
46.0399 – Electrical and Power
Transmission Installers, Other



Career Cluster 1 - Architecture
and Construction



47-2111.00 – Electricians



The Association for Career and Technical Education (ACTE), the leading professional organization for career and technical educators, commends all students who participate in career and technical education programs and choose to validate their educational attainment through rigorous technical assessments. In taking this assessment you demonstrate to your school, your parents and guardians, your future employers and yourself that you understand the concepts and knowledge needed to succeed in the workplace. Good Luck!



Home Builders Institute (HBI), an affiliate of the National Association of Home Builders (NAHB), is a national leader for career training in the building industry. HBI's educational materials are designed to be relevant in today's rapidly changing environment, bringing increased professionalism, competency and effectiveness to those entering the residential construction workforce.

HBI/NAHB assessments are based on national skill standards set by NAHB industry professionals and educators as are the materials contained in the Residential Construction Academy Series. Participants passing the assessments are eligible for certification through HBI/NAHB at the entry, semi-skilled or skilled levels.

Written Assessment

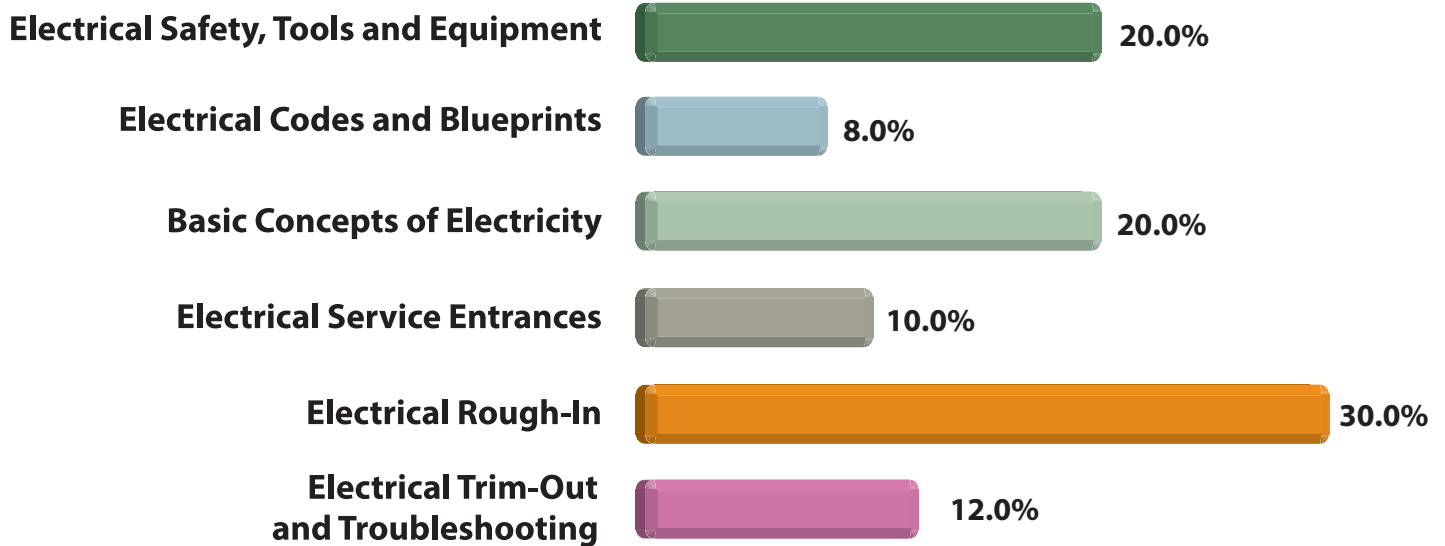
This written assessment consists of questions to measure an individual's factual theoretical knowledge.

Administration Time: 90 minutes

Number of Questions: 100

Number of Sessions: This assessment may be administered in one, two, or three sessions.

Areas Covered



Specific Competencies and Skills Tested in This Assessment

Electrical Safety, Tools and Equipment

- Electrical Safety, Tools, Power Supplies, Ladders, Switches, and Meters

Electrical Codes and Blueprints

- National Electric Code, Blueprints, Measurements, Symbols, and Math

Basic Concepts of Electricity

- AC/DC, Circuits, Capacitors, Transformers, Motors, Generators, Fixtures, and Ohms Law

Electrical Service Entrances

- Service Entrances, Calculations, Services Calls, and Installation

Electrical Rough-In

- Raceways, Conductors, Cables, Boxes, Branch Circuits, Switch Circuits, and Special Circuits

Electrical Trim-Out and Troubleshooting

- Troubleshooting and Installation of Fixtures and Devices



Sample Questions

Current flow greater than 1000 milliamperes through the body could result in which of these conditions?

- A. No sensation
- B. Mild shock
- C. Painful shock
- D. Severe burns and paralysis of breathing

Which of these is a characteristic of a short circuit?

- A. Little or no resistance
- B. Low current flow
- C. Ungrounded neutral conductor
- D. Low voltage

In a pure inductive circuit, the current lags the voltage by which of these?

- A. 35 degrees
- B. 45 degrees
- C. 90 degrees
- D. 180 degrees

Which of these is classified as nonmetallic-sheathed cable?

- A. Type NM
- B. Type BX
- C. Type AC
- D. Type MC

How often do most manufacturers recommended that a GFCI be tested?

- A. Daily
- B. Weekly
- C. Monthly
- D. Annually



Performance Assessment

This performance assessment allows individuals to demonstrate their acquired skills by completing actual jobs using the tools, materials, machines, and equipment related to the technical area.

Administration Time: 3 hours and 20 minutes

Number of Jobs: 3

Areas Covered:

34% Bend Conduit

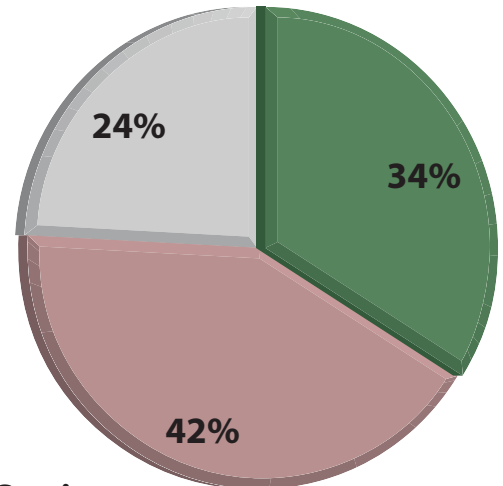
Installation of boxes onto the wall, proper bending and cutting techniques, safety, and time to complete Job 1.

42% Switching and GFCI Receptacle in a Residential Setting

Schematic drawing, installation of wiring, installation of devices, finish, trim-out, operation, safety, and time to complete Job 2.

24% Install Two Smoke Alarms in a Commercial Setting

Installation of components, smoke alarms, functionality, safety, and time to complete Job 3.



Sample Job

Install Two Smoke Alarms in a Commercial Setting

Maximum Time: 1 hour

Participant Activity: The participant will install two smoke alarms in a commercial setting referring to the drawings provided, using MC 14-2 and 14-3 AWG, install two interconnected smoke alarms, use a separate circuit, and home run first smoke alarm; interconnect between the two smoke alarms.

