



CUSTOMIZED TEACHER ASSESSMENT BLUEPRINT

ELECTRICAL POWER AND TRANSMISSION INSTALLERS

Test Code: 5922

Version: 01

Specific competencies and skills tested in this assessment:

Basic Safety

Identify career and training opportunities
Identify causes of job site accidents
Identify job site hazards
Working safely with job hazards
Identify safe methods and equipment of aerial work
Demonstrate basic fire safety
Demonstrate basic electrical safety
Perform lock-out/tag-out
Demonstrate scaffold and ladder safety

Construction Math

Problem solving using whole numbers
Problem solving using fractions
Problem solving using decimal numbers
Convert decimals, fractions, and percents
Problem solving using the metric system
Calculate basic construction problems using geometry formulas
Calculate basic construction problems using algebraic formulas

Hand Tools

Recognize, identify, and safely use hammers and screwdrivers
Recognize, identify, and safely use pliers and wire cutters
Recognize, identify, and safely use saws and chisels
Identify and safely use hydraulic tool systems

Power Tools

Recognize, identify, and safely use drills and saws
Identify and safely use an electric hammer drill
Identify and safely use a reciprocating saw
Identify and safely use a portable hand-held band saw
Identify and safely use a circular saw
Identify and safely use an electric/cordless drill
Identify and safely use a portable jig saw

Electrical Power and Transmission Installers (continued)

Testing Equipment

Identify and safely use a multimeter
Identify and safely use a continuity tester
Identify and safely use a plug-in circuit tester
Identify and safely use a clamp-on ammeter

Blueprint Reading

Identify types of blueprint plans
Identify blueprint symbols
Interpret blueprint plans
Plan branch circuits for blueprint development
Incorporate electrical details to residential blueprint

Residential Cabling Technology

Define residential networks
Identify structured media-systems
Design and plan layout of low voltage circuits services

Anchors and Supports

Identify and install various types of anchors and supports

Raceways

Install Electrical Metallic Tubing (EMT)
Install Poly-Vinyl Chloride conduit (PVC)
Identify surface metal and non-metal raceways (Wiremold®)
Identify flexible raceway
Demonstrate the five bends (90, offset, 3-point saddle, 4-point saddle, kick) used for conduit raceways

Cable Types and Installations

Install Non-Metallic (NM) cable for connection to an electrical device
Install metal-clad cable (MC)
Install telecommunications (Category 5e, 6, 7 cabling) cable
Install a telephone circuit
Install a television circuit
Install rough wiring in a residence
Install finish wiring

Switches and Receptacles Circuits

Install a duplex receptacle
Install a single pole switch
Install a 3-way switch
Install a 4-way switch
Install a split-wired duplex receptacle
Install a Ground Fault Circuit Interrupter (GFCI) receptacle
Install an Arc Fault Circuit Interrupter (AFCI)
Install a timer circuit
Install various special switches and receptacles

Fixtures

Install surface-mounted lighting fixtures
Install recessed lighting fixtures

Electrical Power and Transmission Installers (continued)

Wired Devices

Install a hard-wired smoke detector

Green Technology

Identify renewable energy resources

Identify and safely use energy saving devices

Electrical Service

Install a 100-amp overhead service

Identify a 100-amp underground service

National Electrical Code

Identify NEC publisher

Identify code cycle

Identify purpose of NEC

Identify layout of NEC

Electrical Power and Transmission Installers (continued)

Written Assessment:

Administration Time: 3 hours
Number of Questions: 194

Areas covered:

9%	Basic Safety
5%	Construction Math
5%	Hand Tools
9%	Power Tools
6%	Testing Equipment
5%	Blueprint Reading
3%	Residential Cabling Technology
2%	Anchors and Supports
8%	Raceways
10%	Cable Types and Installations
13%	Switches and Receptacles Circuits
4%	Fixtures
1%	Wired Devices
2%	Green Technology
6%	Electrical Service
12%	National Electrical Code

Sample Questions:

OSHA is a federal agency governing

- A. occupational safety
- B. housing for the poor
- C. minimum wages
- D. zoning laws

When using power tools, proper ground fault protection prevents

- A. excessive noise
- B. electrical shock
- C. losing grip
- D. cutting into electrical wires

What symbol is normally used for duplex receptacles?

- A. circle with two parallel lines drawn through it
- B. circle with one line drawn through it
- C. square box with an X drawn inside
- D. square box with the letter R next to it

Electrical Power and Transmission Installers (continued)

The standard length for sections of electrical tubing or conduit is

- A. 6 feet
- B. 8 feet
- C. 10 feet
- D. 12 feet

The "S" symbol is represents what type of switch?

- A. single pole
- B. four-way
- C. three-way
- D. dimmer

Performance Assessment:

Administration Time: 3 hours
Number of Jobs: 2

Areas Covered:

76%

Switch Controls, Conduit Bending, and GFCI Receptacles

Draw product wiring diagram; select appropriate material; installation of boxes; wiring installation methods; installation of device; functionality; accuracy of measurement; proper bending and cutting techniques; installation of conductors; installation of GFCI and safety/workmanship.

24%

Doorbell Circuit

Identify and select components; installation of components; functionality and safety/workmanship.

Sample Job: Doorbell Circuit

Maximum Job Time: 40 minutes

Participant Activity: Participant will select the necessary tools, equipment, instruments, and materials; follow the Job 2 overview provided; complete all installations in accordance with the NEC; installations should be consistent with electrical codes.