

Certification: Residential Electrical Inspector



Exam ID: E1

- 60 multiple-choice questions
- 2-hour limit
- Open book

Scope:

The Residential Electrical Inspector is responsible for performing inspections of the installation or alteration of electrical systems indoors and outdoors including services, conductors, equipment, components, fixtures, appliances, devices, and electrical appurtenances for one- and two-family dwellings limited to 120/240 volts, single phase, up to 400 amperes.

01	General Requirements	10%
0101	<u>Project Administration</u> Verify that required permits are issued and valid. Verify that the required approved plans and specifications are available when required and retained by the building official for the period required.	1%
0102	<u>Public Information and Legal</u> Communicate the intent of the code using proper terminology. Answer questions about general code compliance, procedures, and materials. Identify the suitability of the installation of materials according to the listing and labeling. Communicate issues and maintain inspection reports, correction notices, stop work orders, and data for the issuance of the certificate of occupancy	1%
0103	<u>Electrical Theory</u> Apply basic electrical theory to determine loads and circuit ampacities for safe installation of electrical systems.	2%
0104	<u>Clearances and Guarding</u> Determine required working clearances, location, access, and guarding requirements for electrical installations.	2%
0105	<u>Connections and Splices</u> Verify that conductor connections, splices, and terminal identification meet code requirements.	2%
0106	<u>Conductors</u> Inspect conductors to verify correct use, type, insulations, markings, and ampacity.	2%
02	Services	17%
0201	<u>Service Size and Rating</u> Inspect services to verify required conductor ampacity, clearances, location, materials, and equipment.	8%
0202	<u>Service Grounding and Bonding</u> Verify size and type of conductors and electrodes, including location and installation.	9%

03	Branch Circuit and Feeder Requirements	28%
0301	<u>Feeders</u> Inspect feeders to verify conductor size, clearances, location, materials, and grounding conductors.	5%
0302	<u>Branch Circuit and Feeder Calculations</u> Verify that the load to be placed on branch circuits and feeders meets code provisions for the conductor, devices, materials, and equipment installed.	6%
0303	<u>Branch Circuit Ratings and Overcurrent Protection</u> Verify correct size, type, location, and installation of overcurrent devices.	7%
0304	<u>Required Branch Circuits</u> Verify that all required branch circuits are provided.	5%
0305	<u>Panelboards</u> Verify panelboard rating, circuit identification, overcurrent protection, and correct installation.	5%
04	Wiring Methods And Power and Lighting Distribution	21%
0401	<u>Installation Methods</u> Verify that installation of all conductors, cables, raceways, and fittings meets code requirements. Verify that underground wiring meets code requirements.	4%
0402	<u>Branch Circuit Required Outlets</u> Verify that receptacle and lighting outlets and switches are provided in all required locations.	4%
0403	<u>Branch Circuits – GFCI</u> Verify that ground-fault circuit interrupter protection is provided in all required locations.	4%
0404	<u>Boxes and Enclosures</u> Verify that boxes are of proper type and correctly sized and installed.	3%
0405	<u>Equipment Grounding</u> Verify equipment bonding and grounding conductor sizes, connections, and installation.	3%
0406	<u>Flexible Cords</u> Verify proper use and sizing of flexible cords.	2%
0407	<u>Class 2 Circuits</u> Inspect low voltage control wiring, Class 2 circuits, and fire alarm circuits.	1%

05	Devices, Lighting Fixtures, and Appliances	19%
0501	<u>Switches and Receptacles</u> Verify that switches and receptacles are of the correct type and rating and are installed properly.	6%
0502	<u>Light Fixtures</u> Verify that light fixtures and fixture wires are of correct type and rating and are properly installed.	4%
0503	<u>Appliances</u> Inspect appliance wiring and equipment to verify correct type, use, installation, and disconnecting means.	5%
0504	<u>Heating and Cooling Equipment</u> Inspect space heating and cooling equipment, including air conditioning and refrigeration wiring and equipment, to verify correct type, use, installation, and disconnecting means.	4%
06	Swimming Pools and Similar Installations	5%
0601	<u>Swimming Pool Wiring</u> Verify proper installation of swimming pools, spas, hot tubs, hydromassage bathtubs, etc.	5%