1.1 Installation Tasks

*Questions related to these tasks make up 77–82% of the exam.*

1.1.1 Properly mount and connect fire alarm system components.

**Knowledge:**
- Representation of system components, cabling, and dimensions on system drawings
- Terminology related to basic components and installation operations
- Roles of codes and standards in fire alarm systems work
- Scopes of the IBC, IFC, and IRC
- Scopes of NFPA 1 and 101 codes
- Scopes of NFPA 70 and 72 standards
- Types of fire alarm systems and associated devices
- Tools required for mounting and connecting fire alarm system components, and their operation
- Materials required for mounting cables and devices
- Functions performed in a fire alarm system by manual fire alarm boxes, automatic fire detection devices, audible signaling appliances, visible signaling appliances, and annunciators; and how they are operated

**Skills:**
- Communicate with other team members about the installation process.
- Recognize the on-site hierarchy of authority.
- Properly use hand and power tools to mount and connect fire alarm system components.
- Apply proper installation techniques under supervision.
- Use project plans and specifications to determine dimensions, type of materials, elevations, and locations.
- Mount and fasten field devices, sensors, and video cameras; and connect power and signaling wiring.
- Assist with acceptance testing by activating initiating and notification devices or visually identifying remote annunciation of devices.

1.1.2 Practice correct wiring methods.

**Knowledge:**
- Representation of system components, cabling, and dimensions on system drawings
- Tools required for mounting cables, wires, conduit, and fixtures, and their operation
- Types of outlet and junction boxes and their applications
- Types of wire and cable, and their applications
- Types of conduit and their applications
- Materials required for mounting cables

**Skills:**
- Use project plans and specifications to determine dimensions, type of materials, elevations, and locations.
- Properly use hand and power tools to mount cables, wires, conduit, fixtures, and supports.
- Apply proper installation techniques under supervision.
- Feed cables through access holes, roof spaces, and cavity walls to reach fixture outlets.
- Position and terminate cables, wires, and strapping.

1.1.3 Practice work-site safety.

**Knowledge:**
- OSHA Publications
- American Red Cross First Aid and Safety Handbook
- Potential hazards associated with hand and power tools
- Potential hazards associated with electrical cables and equipment
- Materials that require special handling and/or disposal methods
- Potential hazards associated with lifts, ladders, and other equipment
1.1.3 Practice work-site safety. (Continued)

Skills:
- Alert the supervisor to any unsafe conditions at the work site.
- Practice safe usage of hand and power tools.
- Practice safe usage of work-site equipment in accordance with the manufacturer’s guidelines.
- Recognize common injuries or conditions, such as cuts, sprains, electrical shock, heat exhaustion, frost bite, fractured limbs, head injuries, or heart attacks.
- Apply basic first aid for common injuries or conditions utilizing materials found in a typical first aid kit or elsewhere at the work site.
- Practice safe ladder usage.
- Use proper fall protection equipment and practices.
- Properly use head, eye, hearing, and foot protection.
- Read and interpret materials safety data sheets (MSDS), and identify hazards information on those forms.

• Identify any hazardous locations specific to the facility where work will be performed.

1.2 Maintenance Tasks

Questions related to these tasks make up 18–23% of the exam.

1.2.1 Perform simple maintenance tasks and operate basic test equipment.

Knowledge:
- Purpose and operation of basic test equipment
- NFPA 72 test and inspection form

Skills:
- Read, interpret, and follow manufacturers’ published instructions for fire alarm system component operation and maintenance.
- Clean fire alarm system components.
- Operate smoke detector testers, heat sources, battery testers, sound pressure meters, VOMs, manometers, and air flow meters in support of the testing of a fire alarm system.