



Fire Alarm Systems Level III Exam Blueprint

3.1 Submittal Preparation and Layout Tasks = 23% of exam

3.1.1 Analyze project requirements and determine if they meet the subject occupancy type

- Read and interpret codes
- Communicate w/architect, engineer, client, AHJ, layout team to establish compliance needs
- Determine proper compliance with codes and standards
- Determine interaction between fire alarm system and codes and standards

3.1.2 Review and implement contractual criteria

- Review plan for compliance with the AHJ and applicable fire and life safety code requirements
- Identify scope of contract to include equipment specified
- Identify deficiencies in writing (e.g. in equipment specifications) and offer alternate/corrected design
- Navigate through documents to find system requirements

3.1.3 Coordinate with client

- Communicate project requirements w/ stakeholders
- Apply the code and standard requirements to proper fire alarm system design installation, and testing
- Coordinate documentation with client
- Perform plan review with AHJ for compliance

3.1.4 Coordinate with design professionals

- Establish means of coordination with all relevant personnel
- Communicate with all design professionals to optimize selected system
- Recognize role of architect, engineer, and construction manager
- Observe best practices of A/E

3.1.5 Identify site conditions

- Determine existing conditions and existing equipment (if applicable)
- Establish contact with owner, end-user, AHJ, client or other authority
- Recognize occupancy types, codes, and standards for site visit and the proper criteria of system application, design, installation, and testing
- Recognize system limitations to site visit and findings
- Identify fire/life safety risks in the premises and fuel loads
- Identify specific site conditions that might cause system problems such as excessive heat, cold, dust, or moisture

3.1.6 Identify AHJ or other authority

- Identify all appropriate AHJ/agencies
- Establish communication with appropriate AHJ/agencies
- Identify code enforcement requirements of specific AHJ/agencies





3.1.7 Create shop drawing

- Review drawings for compliance with manufacturer requirements and contract specifications
- Use and interpret computer aided design (CAD)
- Use industry best practices to communicate with CAD operator
- Document creation of shop drawing
- Ensure system compatibility between components
- Develop fire detection and signaling system architecture
- Research equipment specifications
- Prepare shop drawings for submittal to insurance authorities
- Ensure conformity to manufacturer's installation instructions
- Find appropriate codes and standards as required by specific project or scope of work

3.1.8 Calculate power/battery and other requirements

- Use basic electronics to calculate power requirements and battery standby times for all types of fire alarm systems
- Calculate Ohms law and Kirschoff's law
- Calculate voltage drop
- Calculate power requirements for proper equipment usage
- Calculate storage battery size for supply to given system for standby
- Recognize required primary, secondary and trouble power supply sources

3.1.9 Read specifications and drawings

- Apply advanced knowledge of adopted building codes and fire alarm standards to shop drawings for installation
- Interpret manufacturer's specifications for equipment operation and system installation
- Perform comparative analysis of requirements to manufacturers' specifications
- Read and identify discrepancies in specifications
- Apply drawing conventions**

3.1.10 Research codes and standards

- Direct subordinates in identifying appropriate codes and standards
- Review plan for compliance with the jurisdictions applicable fire and life safety code requirements
- Recognize special requirements of governmental agencies
- Identify any requirements for variances to the applicable codes

3.1.11 Draft written/technical reports

- Apply fire alarms science and standards to technical report
- Review plan for compliance with the jurisdictions' applicable fire and life safety code requirements
- Develop correspondence for dissemination to stakeholders and AHJ
- Evaluate and follow standard business communications practices





3.1.12 Contract and legal duties

Identify qualifying conditions (limits of liability)
Interpret legal terminology

3.1.13 Create project schedule

Establish communication procedure for all relevant trades
Maintain updated files, including all changes, modifications and extras

3.2 Installation Tasks= 25% of exam

3.2.1 Develop installation strategy

Apply strategy for all phases of project from inception to AHJ approval
Review drawings for compliance to manufacturer's requirements, contract specifications and applicable codes
Identify correct detector classification, type, operating principles, quantities and location
Apply installation strategies to the project schedule, including major tasks and deadlines

3.2.2 Order materials

Coordinate materials with job site schedule
Confirm availability of materials to meet schedule
Verify pricing, repair, replacement policies and technical assistance options
Ensure pertinent technicians are familiar with products ordered
Determine any changes made to product line since last ordered, installed, or used
Verify compatibility issues and listings of products
Determine if any materials ordered have been recalled

3.2.3 Establish guidelines for fire alarm system components

Create plans for pulling cables, mounting devices, running conduit
Satisfy the AHJ guidelines in each of these tasks
Determine types of wire, cable, or conduit used in fire alarm system
Define and use the correct method of field wiring system components

3.2.4 Select computer applications to program system

Determine how signals and system power are transmitted
Assure that the proper software version is on site and that the programming technician is certified to operate that program

3.2.5 Resolve on-site scheduling conflicts

Communicate conflicts with stakeholders
Implement written policies and procedures for conflicts





3.2.6 Establish procedures for system commissioning

Establish commissioning procedure in accordance with adopted building and fire codes and standards

3.2.7 Document test completion

Document function testing and completion in accordance with Adopted building and fire codes and standards and the AHJ
Distribute test/completion documentation to stakeholders
Maintain documented evidence of testing

3.2.8 Direct creation of as-builts

Review development of as-builts
Define necessary inclusions in as-builts
Define, measure, and document changes from original to as-built drawings

3.2.9 Identify fire-stopping requirements

Recognize need for fire stop
Know the characteristics and use of fire stopping materials
Ensure compliance with AHJ in application

3.2.10 Supervise worksite safety

Supervise and/or delegate supervision for work site safety
Employ specialist if unfamiliar with management of all of the risks associated with a project
Implement specific safety standards and requirements
Maintain proper documentation
Review all reported incidents
Implement improvement in practice

3.2.11 Interface with other systems and trades

Read schedule to determine order of work
Contact other trades to coordinate project schedule among different trades

3.3 Maintenance Tasks = 18% of exam

3.3.1 Establish test procedures and standards

Resolve issues reported by subordinates
Determine requirements and procedures for conducting tests
Define and use periodic equipment and circuit testing procedures
Define methodology of tests for fire alarm system components and for fire alarm system

3.3.2 Oversee troubleshooting and repairing of system faults

Resolve issues reported by subordinate
Investigate feasibility of repair or replacement





3.4 Education/Communication Tasks = 16% of exam

3.4.1 Train and mentor Level I and Level II co-workers

Communicate standard business practices to subordinates
Convey Codes/Standards Requirements to subordinates

3.4.2 Determine staff training needs

Determine skill gaps
Identify training opportunities

3.5 Management/Supervision Tasks = 18% of exam

3.5.1 Manage simultaneous projects

Coordinate project schedules
Communicate scheduling to on-site staff
Quantify progress and delays

3.5.2 Manage manpower

Coordinate with management
Coordinate with other trades
Communicate with project team(s)
Communicate manpower needs to management

3.5.3 Oversee technical aspects of job

Coordinate resolution of technical issues
Identify proper application methods for codes, standards, specifications, and/or guidelines

3.5.4 Resolve interpersonal conflict

Communicate with affected parties
Negotiate settlement of conflicts
Arbitrate disputes
Document procedures

3.5.5 Resolve ethics issues

Review personnel issues and recommend action

3.5.6 Oversee adherence to rules promoting safe work environment

Oversee adherence to safe practices
Alert proper authorities to unsafe situations
Instruct subordinates in ways to promote safe working environment
Recognize and correct unsafe work practices





3.5.7 Monitor adherence to budgets

- Determine competitiveness
- Calculate preliminary budget estimate
- Review project expenditures
- Alert proper authorities to any change(s) and/or modifications to the scope of work

