



Boston Fire Department Fire Alarm System Permit Guidelines 617-343-2043

In order to better serve our Fire Alarm Permit customers the Boston Fire Department in conjunction with the City of Boston is moving to a new online permitting experience and **will also be accepting plans electronically**. In order to make this experience work to your advantage and complete a successful more timely application **you must comply with all of the guidelines provided below**.

One item of very important note, **we are now categorizing our Fire Alarm Applications by type during the initial application process**. These categories are:

- Installation of a New Fire Alarm System
- Alteration to an Existing System with ten (10) or fewer devices
- Alteration to an Existing System with eleven (11) or more devices
- Replacement of a Fire Alarm Panel only
- Replacement of Existing Phone Communicator Devices only

There will be category specific information in Section III of this document.

These guidelines are broken up into three areas so you can:

- be better prepared for the application process
- better organize your application submittals (whether you choose the on-line process or choose to apply on paper)
- better understand the requirements
- get your permit faster and permits are valid for 1 year from approval

The three areas are:

- Plan Submittal Requirements
- Supporting Document Submittal Requirements
- Category Specific information

I. Plan Submittal Requirements

Plans, meeting all of the requirements listed below, are mandatory for all application types except the Replacement of Existing Phone Communicator Devices only.

The following are required regardless of format (electronic vs. paper):

1. Plans should be Tier II Fire Alarm Plans showing all fire alarm devices and their location with room names labeled and scale noted
2. General Content Requirements -
 - Plans should be submitted as a fire alarm layer only; other electrical components should not be shown.
 - Where more than one type of visual appliance is specified, the candela of each should be noted as a subscript to the device on the drawings.
 - Provide necessary information regarding ceiling heights and ceiling construction details.
 - Provide necessary information regarding walls and openings
 - A riser diagram is required for each system.
3. On the far right hand side plans should include the following:
 - The property address for which the permit is being requested
 - Engineering Calculations as necessary for completion of the proposed design
 - Stamped approval from the Fire Protection Engineer or Architect
 - a. Stamp must include their seal and signature

- If plans are prepared by the license contractor
 - a. The licensed contractor signing the plans must include the contractor's license number
- 4. On each drawing sheet a 3"x 24" area located in the upper right corner and adjacent to the title block shall be left empty for the placement of the Plans Examination Engineer's approval stamp.
- 5. All plans shall include an equipment legend.
- 6. Approved plans will need to be printed by the applicant to have on the job site.

Technical Submittal Requirements for eplans

1. All documents shall be in Portable Document Format (PDF) and compatible with Adobe Acrobat Pro DC (pdfs created in Acrobat versions 7 and above should be fine)
 - Plans should be submitted as a single bookmarked document with a cover sheet detailing all sheets in the set. Only sheets included in the submitted set should be included in the index.
 - Each sheet shall be named in a way so the reviewer can quickly move from sheet to sheet
 - All sheets shall be oriented so that the top of the page is always at the top of the computer monitor
 - Size limit on attachments (file) is 40 MB
 - ePlans must be submitted as direct .dwg→.pdf conversions. Do not submit scanned documents. For help converting AutoCAD drawings to PDF, refer to this video: <https://www.youtube.com/watch?v=79VT6xBm01E>. BFD reserves the right to reject blurry or otherwise unclear plans.
 - Plot the plans to a 24"x 36" sheet using a 1/4"=1' or 1/8" = 1' scale as appropriate and ensure the design professional has sealed and signed them. If the design professional prefers to use a digital certificate to sign their electronic plans, please be advised that the document must not be locked upon signing.
2. Plan review corrections will need to be resubmitted in the same format as the original submission.

II. Supporting Document Submittal Requirements

All of the following information is required at the time of submittal in order for the application to be accepted, including copy of the installer's license and their photo ID.

Note for electronic applications: you will be prompted for each item as a separate document file to upload during the application process.

Required Documents (**note - *for electronic applications these must be separate files***)

1. Copy of **Installer's License and their Photo ID**
2. **Manufacturer's cut sheets for all equipment** - Manufacturer's cut sheets are checked for UL listing, compatibility and to verify values used in battery calculations. Be sure this information is available.
3. **Complete battery calculations back to main panel** - All initiating devices and notification appliances should be included.
 - a. If this is an addition to an existing system, the ability of the existing panel to accept the addition of a zone or devices should be shown.
 - b. Submit voltage drop calculations in addition to battery calculations.
4. **Narrative describing scope of work and basis of design** - The narrative should briefly but completely address the scope of work being done. The information provided should explain the scope of the entire project and why the fire alarm work arose, not just the extent of the fire alarm work. Information should include:

- a. complete building description including the occupancy type(s) per 780 CMR Chapter 3 (use groups)
 - b. building height and number of stories
 - c. and occupancy separations
 - d. The code which the fire alarm system is designed under.
 - e. If the designer is taking advantage of exceptions within the State Building Code, this should be addressed here
 - f. Describe all non-required systems and components
5. **Sequence of Operations for alarm system** - This information is now required on the plans per 780 CMR 907.1
- a. describe all functions that interface with the fire alarm control panel including and not limited to how the initiating devices report an alarm condition to the building occupants and/or the fire department
 - i. document what signals are being transmitted from this protected building to the monitoring station
 - b. Additional controls by the fire alarm system, such as elevator recall and smoke control should be addressed
 - c. Must contain an input/output matrix.
 - d. Locations requesting a Masterbox installation must have the designer or installer contact the Superintendent of Fire Alarm, 617-343-2060, prior to beginning installation.

III. **Category Specific Requirements**

*** **Please note:** if upon review of your application the Boston Fire Department can disapprove or re-categorize and application for proposed fire alarm work if the scope of that work exceeds the parameters of the definitions listed below. That will cause the application to be re-req'd in the appropriate spot. ***

- 1. **Installation of a New Fire Alarm System** – All items from Section I and II above apply
- 2. **Alteration to an Existing System with ten (10) or fewer devices** - All items from Section I and II above apply and
 - a. The 10 devices include new, relocated and existing devices
 - b. Narrative is to include:
 - i. a confirmation that the new and existing devices do not exceed 10 devices
 - ii. accurate description of the devices involved in the alteration
 - c. Proposed work in this category found to be exceeding 10 devices will be categorized and re-req'd by BFD to the 11 or more device category
- 3. **Alteration to an Existing System with eleven (11) or more devices** - All items from Section I and II above apply
- 4. **Replacement of a Fire Alarm Panel only** - All items from Section I and II above apply but there are a few items to note:
 - a. With the plans a riser diagram is required (Section I)
 - b. With the Manufacturer's Cut Sheets smoke detector and notification appliance compatibility with the panel shall be confirmed (Section II, 1)
 - c. Battery Calculations must be complete and back to the main panel (Section II, 2)
 - d. Narrative describing the scope of work and basis of design (Section II, 3) including:
 - i. the code of record under which the existing fire alarm system was installed
 - ii. a procedure for connecting existing system circuits/zones to the new panel ("cutover procedure") to include
 - 1. an explanation of when
 - a. work will be done
 - b. how long it will take

- c. if existing panel will be maintained during cutover
 - iii. a graphic firefighter smoke control station layout
 - e. Sequence of Operations for the system is required (Section II, 4)
 - f. If the facility has a smoke control station
 - i. Plans (Section I) must include a graphic firefighter smoke control station layout for buildings with mechanical smoke control systems to satisfy NFPA 72, UL and UUKL listing requirements.
 - ii. Narrative (Section II, 3) must have submitted with it an investigation and evaluation report as required by the state building code.
- 5. Replacement of Existing Phone Communicator Devices only with Radio, AES, or Wireless Communicators on existing Fire Alarm Systems **only the documents listed below are required to be submitted with the application to BFD:**
 - a. Manufacturer's cut sheets for equipment being added - Manufacturer's cut sheets are checked for UL listing, compatibility and to verify battery calculations – provide battery calculations or battery equipment to be used. Be sure this information is available.
 - b. Provide the buildings existing fire alarm Sequence of Operations.
 - c. Provide the AES, Radio, or Wireless Sequence documenting which type is proposed and what signals are being transmitted from this protected building to the supervising station.
 - d. Document in the narrative the location of the transmitter within the building and what action the supervising station operator shall initiate for each signal upon receipt of alarm, trouble or supervisory signals. (For guidance, refer to NFPA 72, Section 26.4.5.6.).
 - i. For example, supervisory signals can be, either local smoke detectors attached to the fire alarm panel, carbon monoxide detectors or tampers, each requires a different response.