



Town of Plymouth
Fire Department
Fire Prevention & Code Compliance Division
114 Sandwich Street
Plymouth, Massachusetts 02360
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Contractor Guidelines for commercial, mercantile, industrial, multi-unit or multi-story residential projects

Fire Department Pre-Construction Conference

Discuss local ordinances, by-laws, AHJ issues

Plan Submission & Review

Submit original stamped plans, 1 full size and/or 1 half-size, Email a PDF file to dmalaguti@townhall.plymouth.ma.us

Fire Protection Narrative Report

Cut sheets for all fire alarm and sprinkler system devices

Turn-around time for plan review may be up to 7-10 days

The Plymouth Fire Department conducts a review of plan submittals to facilitate compliance with local, state and federal fire protection standards. The department does not design fire protection systems or equipment and is not responsible for any errors of omission or commission in connection with the failure of any fire protection system, component, or device.

Permit Application(s)

Contractor or Installer for fire protection systems submits copy of MA state contractor or technician license or Certificate of Competency. Sprinkler and fire alarm contractor submissions must include a narrative, plans, copies of licenses and cut sheets. An inspection fee is required at the time of submission for new construction/installs. A permit and inspection fee are required for existing occupancies requiring modifications/alterations.

Fire Dept. permits required for:

Smoke, Carbon Monoxide & Heat detectors, hood suppression (Ansul system), cutting/welding operations, fuel storage tanks, LP Gas tanks & cylinders, demolition of a structure, portable or temporary heating appliances, dumpsters with capacities greater than 6 yards, Fire Sprinkler and Fire Alarm modifications and alterations.

Inspections

Site inspections occur during phases of construction & prior to enclosure of any system devices such as concealed sprinkler heads, zone valves, duct detection, etc.

***Acceptance Testing & Occupancy Permit**

It is essential that these guidelines are adhered to in order to ensure a system and occupancy sign off. A Final Walkthrough appointment date requires at least 3 days advance notice, subject to Fire Prevention office schedule.

Requests for acceptance testing should occur only when the building is ready for occupancy, all systems are 100% ready and tested by the installer and completion

paperwork is forwarded to the AHJ. All fire protection systems will be tested on the same day and time. All installers and contractors must be present to conduct testing.

Completion paperwork, installer's affidavits, and test reports must be presented prior to permit sign-off and occupancy certification.

PLAN REVIEW

The Plymouth Fire Department conducts plans review for **Site Plans & Apparatus Access and Fire Protection Systems** in accordance with 527 CMR 1 (Massachusetts State Fire Code) and the International Building Code 2009 Edition, chapter 9 which includes requirements for a **Fire Protection Narrative Report**.

One set of original, 'wet stamped' plans and one set in a PDF format are sufficient for our office.

The plan review fee is 7.5 cents per square foot for commercial projects, the review time is 7-10 days. Plans may be submitted in person, or by mail. Checks are payable to the Town of Plymouth.

The application for permit, (Building Permit) is available through the Building Department. On that form the Fire Department will sign off as to which systems are required and types of permits necessary.

Inspection Fees for fire alarm and sprinkler work must be obtained by licensed contractors prior to any shut off or installation of devices or components. Fire Sprinkler and Fire Alarm inspection fees are based upon the square footage of the building, or tenant space, multiplied by 0.06 (6 cents per sq. ft).

Refer to Massachusetts Fire Code 527 CMR 1 for details concerning applicable permits for temporary heat, dumpsters, cut and weld with particular attention to chapters 16-19 building construction, demolition and fire department site access and contractor safety plans. A written fire safety plan during the construction phase shall be submitted prior to the start of construction.

Plymouth By-Law or AHJ Requirements

MGL Ch.148 sec. 26G, 26H & 26I have been adopted in Plymouth
Buildings 7500sq.ft. and above are to be sprinklered.

Multiple tenant buildings shall be considered to be "one" building and as such fire protection systems are required to be installed and maintained by one company or contractor throughout to insure compatibility and uniformity.

Bylaw 74-1 Fire Lane and Accessibility, minimum 20-foot-wide access around building, 50-foot minimum turning radius for apparatus, Fire lanes shall have adequate "NO PARKING" signage, striped diagonal lines and "NO PARKING FIRE LANE" painted on pavement around building perimeter and at fire hydrant locations

Zoning By-Law 300.05 "Uses to Have Access" ref: Adequate Fire Suppression Access, un-obstructed access to front & rear of building, all hydrants and sprinkler connections. A sprinkler system may be required in buildings that do not meet minimum access requirements.

In existing **A-2** occupancies with an occupant load of 100 or more, in new A-2 occupancies with occupant load of 50 or more and in A-2 of 5,000 sq. ft or greater as required in **Ch 148 s26G1/2**.

Assembly Occupancies 5000sq.ft. and up shall be sprinklered. **A-2nc occupancies with 50 or more persons shall be sprinklered per Ch.304 of the Acts of 2004 and building code.**

Building address (street # and bldg. or unit #) will be permanently affixed to structure near front entrance. On large buildings address may be required at rear of building as well. Numerals and letters shall be reflective and in a contrasting color, easily visible from the street. (Residential 4" minimum height, Commercial 6" to 8" minimum)

Bylaw 14.11 Knox Box key vault installation required for commercial fire alarm users. Emergency access to the building shall be facilitated by the installation of the **key vault** affixed adjacent to the main entry door, 54 to 60 inches above finished grade. On large buildings a second key box may be required on the rear of the building at utility or fire protection entry points. Door entry keys and FA panel pull station keys as required. **All keys will be provided on a ring with a sturdy tag and labeled.**

FIRE ALARM SYSTEMS (Installed under NFPA 72)

General:

Fire alarm systems and burglar or security systems SHALL NOT be integrated together in the same equipment or system.

A permit shall be obtained from the fire department prior to any work on a fire alarm system for shutdown in a non-occupied building, AND for modification or renovation work on fire alarm systems as required by MGL Ch.148 sec.27A.

Submittal and Inspection Fee required for new installations- apply on fire department Submittal & Inspection Form.

Buildings that have a fire alarm system only or in addition have installed sprinklers under NFPA 13, 13R, an assembly use group over 50 occupants, buildings 7500 square feet or greater, or a Master Box, shall be equipped for Central Station Monitoring by a UL or FM certificated monitoring company for the purposes of supervision of the systems. (Mass Building Code)

Fire alarm panel to be addressable, LCD alpha-numeric readout of all FA devices Class 'A' wiring. All cable to be FA rated; Red in color, cable not run inside a conduit shall be plenum rated, all cable subject to mechanical damage shall be protected by conduit.

Remote "key enabled" full-function annunciator with LCD display in vestibule, foyer or lobby of main entrance. Remote annunciators mounted outside a structure shall be inside a heated cabinet.

Building schematic with each zone and floor indicating all fire alarm initiating devices (pull stations etc.). Indicate "you are here", highlight locations of all stairs, elevators and fire alarm and sprinkler room, fire department connection, standpipe connections, rtu's identified by address and number. Graphic plans shall be located near annunciator and main fire alarm panel room. Fire sprinkler graphic in sprinkler control valve room.

Weatherproof, red, strobe light above main entrance or located per instruction of fire prevention officer. White strobe and bell over fire department connection for activation of a waterflow condition.

AHJ will require a lockable documentation cabinet installed adjacent to main fire alarm panel.

Individual HVAC units with duct detectors shall shut down and transmit a supervisory signal if activated.

ALL HVAC units will all shut down in general alarm condition.

Carbon Monoxide detection systems, required in certain occupancies by 527CMR31.00 and 780CMR, shall be integrated into the fire alarm system and send a distinct signal upon activation.

FD contact for alarm monitoring companies shall use 508-747-2211 or 830-4212.

Radio Master Boxes

Equipment

All equipment in the fire alarm system shall be NFPA 72 approved, this includes all fire alarm panels, relays, modules etc. All radio master boxes shall meet the requirements of NFPA 72, Chapter 27. All radio master boxes shall be compatible with the Signal Communications Vision-21 receiver.

Before Installation

All radio boxes, Gamewell shells and limit switches shall be brought to the Fire Alarm Shop at 114 Sandwich Street, Plymouth, MA for inspection and approval. This includes the radio box, RF Cable and Gamewell shell. **Any equipment not meeting the manufacturer's or Fire Department requirements will not be accepted.**

Permits

As required by Massachusetts General Law Chapter 148, Section 27A a permit will be issued by the Plymouth Fire Department to perform work on an existing fire protection system. A fee for the inspection/ acceptance of the system will apply.

A Plymouth Fire Department radio master box form shall be completed, this form must always be accessible at the job site until connection to the municipal fire alarm system.

Installation

The entire system shall be installed according to the following: Manufacturer installation requirements. NFPA 72, and NFPA 1221

Radio Alarm Box and the Fire Alarm Control Panel shall be located inside the main entry or front vestibule of the protected property. The radio Box must be mounted at the same height as the FACP. A surge arrester shall be installed on the AC power leads of the radio box.

The fire alarm control panel shall be connected to the radio alarm box in such a way that when a zone is activated, only the corresponding zone of the radio

alarm box will be activated. Radio Alarm Box zone assignments will be made in consultation with the Plymouth Fire Department. The Plymouth Fire Department will issue the Master Box number assignment. Radio Alarm Boxes shall be programmed to self-test once daily, the Plymouth Fire Department will assign the time of the test.

Radio Alarm Boxes shall be programmed for a 30 second delay in transmitting a trouble condition. FACP troubles shall not transmit to the Fire Department via radio box. Radio Alarm Boxes will be programmed with door open tamper switch active. All FACP troubles shall transmit to a listed monitoring company. Only the following box troubles shall transmit to the Fire Department.:

- Low Battery
- No AC power (program for a 3-4-hour delay)
- Zone Connection trouble
- Radio transmitter/ antenna trouble
- Door tamper

A Gamewell 3-fold style shell shall be installed at the main entrance of the building. The door shall have a limit switch installed on it to activate the radio box and call Central Station when the Gamewell box is pulled. The FACP shall announce the alarm at the panel, but not sound the horns/strobes within the building. This point shall be programmed as non-latching, so the FACP will clear when the reset button on the limit switch is pressed. The door shall have a limit switch installed on it to activate the radio box only when the Gamewell box is pulled. **This box shall be visible from the street and have a red light installed over it.** The light shall always be lit and be on the same circuit as the FACP. The light source for the light shall be an Edison-based LED bulb.

Antenna Requirements:

Antennas for radio alarm boxes shall be installed according to the following: Manufacturer installation requirements. NFPA 72, and NFPA 1221 *Antenna location to be determined during consultation with Plymouth Fire Department.* Any antenna cable run under 100' shall meet or exceed RG213. A rigid aluminum or galvanized steel conduit shall protect any antenna cable for the entire cable run. Service Box or weather head at antenna. The antenna shall be located at least 20' away from any HVAC equipment or other metal enclosures on the roof.

Scheduling:

Connecting to the municipal fire alarm requires advance notice. Call at least one week ahead to schedule a connection. A member of the Plymouth Fire Department must be present when the radio alarm box is placed in service. A representative from the installing company must be present to conduct the acceptance testing. When calling to schedule a connection, please be prepared to provide the Plymouth Fire Department a completed copy of the Fire Alarm System Form.

Note to Installers: These guidelines are subject to change; please make sure you are using the most recent revision.

FIRE SUPPRESSION SYSTEMS

Automatic Fire Sprinklers in buildings 7500sq.ft. and greater, A-2 Assembly occupancies with occupant load of 50 or more, or as required under 780CMR, 527CMR, Ch148 s26G, 26G1/2., 26H and 26I or zoning permit requirements Hood System, Ansul wet chemical UL300 as required by code, NFPA96 Electronic equipment & Special Hazards protected by FM200, CO2 total flooding or other systems as applicable. Dry Chem NFPA 17 systems.

All fire suppression systems shall be monitored for trouble and supervisory conditions.

Sprinkler and Standpipe systems (Installed under NFPA 13, 13R and 13D)

Permits shall be issued only to “a licensed sprinkler contractor”.

A permit shall be obtained from the fire department prior to any work on a fire sprinkler system for shutdown in a non-occupied building, AND for modifications or alteration work on fire sprinkler systems as required by MGL Ch.148 sec.27A.

Submittal and Inspection Fee required for new installations- apply on fire department Submittal & Inspection Form.

Tamper switches installed with supervisory signal

Supervised low pressure alarm on city side of backflow preventer, **trouble signal** upon activation

Low pressure alarm on system side of wet system, **alarm signal** upon activation

Flow test, time to alarm 60 seconds or less desired

Electronic water bell with white strobe beacon overhead FDC activated by water flow.

Hydraulic charts & signage on all valves, drains, inspector’s test.

Schematic building diagrams shall display coverage area for system if multiple zones. Zones shall be numbered, and color coded for identification on displayed building diagrams within sprinkler valve room.

Spare sprinkler heads (at least 3 of each type) & wrench in cabinet

Zone valves with water flow and low pressure on multi-unit, multi-tenant occupancies with one system

Zone valves for each floor or dwelling in residential occupancies

Zone valves at in-rack storage sprinkler locations

Zone valves and Inspector’s Test valves shall be located to provide easy access.

Those located above a suspended ceiling shall be installed within 2 feet of the ceiling tiles for accessibility by 6-foot step ladder

Post Indicator or Wall Indicator Valves in buildings where direct access to the sprinkler valves is not provided (valves in basement, remote from point of entry, excessive travel distance, etc.)

Fire hydrant (s) to be located within 100 feet of FDC preferably on the same side of the street as building. Hydrants shall be installed at least 24 inches from the center of steamer cap to finished grade or 6 inches from the bottom flange to finished grade. Fire hydrants shall have a **hydrant marker** installed. Markers shall consist of a 4 to 5-foot reflective fiberglass marker connected to a stainless-steel spring mount installed on a top flange bolt of the hydrant. FDC shall be 4” **Storz** type with a strainer screen of 1/4” mesh and a 30-degree elbow downward, no less than 24” from finished grade. The FDC shall be located on the street side

of buildings, fully visible and recognizable from the nearest point of fire apparatus access. (Location per Fire Prevention Officer's directions.) NFPA 13 projects, provide a permanently marked and securely mounted general information sign on each riser, antifreeze loop or auxiliary control valve. **Standpipes, Hose Valve Threads, 1 ½" Iron Pipe, 2 ½ "National Standard Threads** Valves are to be aligned in a manner to reduce the likelihood of the hose line being kinked, elbows may be required as necessary. Signage on doors to fire alarm/sprinkler rooms Refer to *IBC 2015, section 914.2* for required signs for fire protection equipment rooms and locations. Also refer to the *IFC 2015 sec 509*, and NFPA 170 symbols - "Sprinkler Control Valves", "FACP" etc.

Shelving in storage and warehouse racks greater than 36" wide shall be open mesh to enable water from fire sprinklers to reach merchandise in the event of a fire. In-rack sprinklers required where merchandise is encapsulated over 25 feet.

ELEVATOR SYSTEMS

524CMR 17.39(4) Elevator contractor shall notify Plymouth Fire Department to coordinate receipt of instructions on use of 3502 keyed switch. At least two sets of keys will be turned over to a fire department representative.

RTU's

Numbered on at least two sides in 6-8" block letters of contrasting color or Reflecting. Number shall be associated with the street or occupancy address preceding the hvac unit # (example 23-1, 23-2...)
LED or keyed remote test switch shall be labeled with device # info corresponding to roof-top designation, **located near main FACP**.
Where rtu's with duct smoke detectors are above a suspended ceiling the tile grid shall be marked with a red dot if an LED is not present

Emergency responder radio coverage shall be provided in all new buildings in accordance with IBC 2015 section 403.4.5 and section 510 of the IFC 2015 to provide for the safety of first responders and occupants. An on-site survey by a 3rd party communications company shall be completed prior to final inspection in order to determine the need for a BDA system subject to AHJ review.

FINAL INSPECTION AND OCCUPANCY

The licensed technician that performed the fire protection system installation shall be present to conduct performance testing.

Contractor is to be present at the final inspection for occupancy.

Completion Paperwork Required by AHJ for Occupancy Sign-off*

*** Note: Paperwork must be received by AHJ prior to scheduling an acceptance test.**

- Signed and stamped affidavits for sprinkler & fire alarm design/installation with Contractors Material and Test Certificate and NFPA 72 report, respectively from subcontractors.

- Testing certificates for fire alarm & sprinkler systems
- UL certificate of supervising central station
- Underground Test Material Certificates
- Stamped/Certified 200 # test report
- Contractor completion letter on company letterhead attesting to installation according to 780CMR, NFPA codes 13, 13R, 72 etc.
- Certified “As Built Plans” stamped by a registered design professional
- Certification from a Registered Design Professional attesting that the fire protection systems have been installed IAW the approved fire protection drawings.
- Owner- provided completed “Emergency Contact” list form.

Connecting to the municipal fire alarm requires advance notice. Call at least one week ahead to schedule a connection. A member of the Plymouth Fire Department must be present when the radio alarm box is placed in service. A representative from the installing company must be present to conduct the acceptance testing.

When calling to schedule a connection, please contact the Plymouth Fire Department Fire Alarm Superintendent.

Testing & Maintenance of Fire Alarm and Sprinkler Systems or other Suppression Equipment

Copies of Quarterly, Semi-annual and Annual Test Reports and/or repair work conducted by licensed, qualified technicians and companies are to be forwarded to the Plymouth Fire Department Fire Prevention Office at 114 Sandwich Street, Plymouth, MA 02360.

A permit, issued by the fire department, is required prior to any repair, alteration or shutting down of any fire alarm, sprinkler or fire suppression system as regulated under MGL. Ch148 s27A.

Other Permits required as needed:

- Hot Work, Cutting & Welding, Open Flame Torch
- Temporary Propane Heaters and Tanks
- Temporary Fuel storage for equipment
- Propane Cylinder storage
- Dumpsters over 6 cubic yards

If you have further questions, please contact me at 508-830-4213 x110.

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Plymouth Fire Department
114 Sandwich Street
Plymouth, MA 02360

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