



# CITY OF WORCESTER, MASSACHUSETTS FIRE DEPARTMENT



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## **WORCESTER FIRE PREVENTION DESIGN STANDARDS**

All standards are in accordance with 780 CMR, 527 CMR 1.0 and the standards referenced therein.

### **Exterior Fire Alarm Notification:**

1. For buildings provided with a fire alarm system, an exterior fire alarm beacon is to be provided meeting the following criteria:
  - a. Located in the close general proximity of the exterior door leading to the fire alarm annunciator.
  - b. The location of the exterior beacon shall be visible from the public way approach in both directions. (one-way and dead-end streets need only have the exterior beacon visible from the one direction of approach)
  - c. A location high enough above the ground to prevent vandalism, obstruction by parked vehicles, piled snow and landscaping.
  - d. If a single location cannot satisfy criteria a.-c, contact the fire prevention office to establish a suitable location.
  - e. Exterior Fire Alarm beacons shall not be located within alcoves, behind awnings, canopies, signs or other projections that would obstruct view of the beacon.
2. A waterflow bell shall be provided for all buildings provided with an automatic water-based fire protection system in accordance with 780 CMR 903.4.2. The bell shall be located above the Fire Department Connection approximately 8-10 feet above grade. The bell shall activate upon waterflow only. It may be of the motor gong type, 120 Volt electric or 24 Volt electric type.

### **Fire Alarm Annunciation:**

3. A fire alarm annunciator shall be installed in close proximity to the ground level entrance door to the building closest to the vehicular approach suitable for fire department apparatus in accordance with section 10.18.3(.1 & .2) of NFPA 72. The main display (text screen) on the annunciator shall be approximately 64 inches above the floor.

### **Fire Alarm Notification Appliances:**

4. The fire alarm notification appliance located closest to the fire alarm annunciator and fire alarm control panel shall be visual (strobe) only. (To prevent audio interference with portable radio transmissions and to prevent feedback in voice evacuation systems)
5. Fire alarm notification appliances are not to be provided within enclosed exit stairs (except where speaker paging circuits are required in the exit stairs of high-rise buildings) in accordance with section 23.8.6.2 & A23.8.6.2 of NFPA 72.

**City of Worcester Masterbox Fire Alarm Monitoring Service:**

6. The City of Worcester municipal Masterbox monitoring system consists of an AES wireless mesh network. Approved transmitters for the City of Worcester Masterbox monitoring service are AES model 7788F. More information regarding Masterbox installations can be found here: <http://www.worcesterma.gov/fire/enforcement-engineering>

**Building Access Key Boxes (commonly referred to as Knox Boxes)**

7. The City of Worcester uses Supra by Kidde brand building access key boxes. Order forms can be obtained by emailing [Prevention@WorcesterMA.gov](mailto:Prevention@WorcesterMA.gov) or calling 508-799-1931.

**Townhouses; Sprinkler Systems**

8. All new townhouse buildings with three or more units shall be provided with an automatic sprinkler system in accordance with 780 CMR 51-R313.1 and 780 CMR 903.2. Design standard to be determined in accordance with 780 CMR 51-R313.1.1 and 780 CMR 903.2.
9. Townhouse sprinkler systems shall be provided with a separate water service for each unit.

**Fire Department Connections:**

10. Fire Department Connections are to have 2½” threaded type swivel fittings, using National Hose Standard thread in accordance with section 6.8.1 of NFPA 13 and section 4.8.2 of NFPA 14. The number of couplings is to be determined by section 8.17.2.3 of NFPA 13 or section 7.12.3 of NFPA 14.
11. Fire Department Connections are to be located on the face of the building fronting a public way in accordance with section 8.17.2.4.6 of NFPA 13. If the building is not adjacent to a public way or is set back from the public way, an alternate location, suitable for ready vehicular access by fire department apparatus may be approved.
12. Caps for Fire Department Connections are to be the metal breakable type in accordance with sections 6.8.2 and 6.8.3 of NFPA 13. Plugs made of metal or plastic material may also be used if they are provided with spanner lugs. No plastic breakable caps or plugs without spanner lugs are to be used.

**Sprinkler & Standpipe System Pressure Gauges:**

13. Pressure gauges shall be installed on the street side of all backflow prevention devices in accordance with sections 7.1.1.1, 7.1.1.2, and 7.2.1 of NFPA 13 and section 5.5.1 of NFPA 14.

**Standpipe Hose Connections:**

14. 2½” Standpipe hose connections shall not be provided with pressure regulating devices where static pressure does not exceed 175 psi in accordance with section 7.2.3.2 of NFPA 14.
15. Standpipe hose connections shall have National Hose Standard thread connections in accordance with section 4.7.3 of NFPA 14 where they are required to be installed.

## **Street Addresses**

16. Street addresses must be provided for every building where it is visible from the public way or private street in accordance with MGL 148 s. 59, such that:
  - a. The address shall be a size suitable to be seen clearly from the public way or private street.
  - b. The address shall be visible from both directions of approach (excepting one-way and dead-end streets).
  - c. The address shall not be located within alcoves, behind awnings, canopies, signs or other projections that would obstruct view of the address.
  - d. The color of the address shall contrast with the color of the surface to which it is affixed.
    - i. It is recommended that numbers not be affixed to doors or other movable building components that could result in the numbers not being visible at all times.

## **Emergency Responder Radio Enhancement System (BDA & DAS systems):**

17. All new buildings shall be tested for the installation of an Emergency Responder Radio Enhancement System in accordance with 780 CMR 916. Testing is to be performed by an approved vendor and the resulting report is to be provided to the Fire Prevention Office for Review.
18. Emergency Responder Radio Enhancement Systems are to be installed in accordance with 780 CMR 916, and NFPA 72, inclusive of, but not limited to chapter 24, applicable sections of 527 CMR 12, Massachusetts Electrical Code.
19. Design documents for Emergency Responder Radio Enhancement Systems shall be provided in accordance with 780 CMR 901.2.1.1 & 901.2.1.2 and sections 7.1-7.4 of NFPA 72.
20. System completion documentation shall be in accordance with 780 CMR 901.2.1.3 and sections 7.5-7.8 of NFPA 72.

NFPA 13, NFPA 14, & NFPA 72 Citations are to the 2013 editions as referenced by 780 CMR; 9<sup>th</sup> edition and 527 CMR 1.0. Citations of 780 CMR are to the 9<sup>th</sup> edition.  
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