

# MEHLVILLE FIRE PROTECTION DISTRICT

## SPRINKLER CONTRACTOR ADDENDA

### COMMERCIAL CONSTRUCTION GUIDELINES

June 15, 2004

The standard guidelines are applicable as far as how to apply for permits. There is, however, some additional information that you should be aware of before you begin the design phase for a sprinkler system. You need to call one of the inspectors to determine the applicable edition of *NFiPA 13*, **BEFORE** you begin your system design. The applicable edition is determined by which edition is referenced in the currently adopted *ICC<sup>®</sup> International Building Code/2003* use of the timing of printings, the most current edition of *NFiPA 13* may not be the applicable edition.

- I. *NFiPA 13 - Standard for the Installation of Sprinkler Systems* provides that the authority having jurisdiction (ahj) can require an adjustment to the waterflow test data to account for seasonal fluctuations in the water supply system. To that end, we have included a provision in our adopting ordinance to deal with this issue.

**Water flow safety factor:** A safety factor shall be applied to all flow tests for *automatic sprinkler systems*. A parallel curve shall be drawn to the actual flow test curve that has been reduced by 20% of the static pressure. An *automatic sprinkler system* design shall not exceed the 20% curve.

This factor allows you a *cook-book* method to deal with seasonal demands, rather than getting Missouri-American Water Company to do a calculation for each and every site. This safety factor was developed through the Metropolitan Fire Marshals Association Water Supply Committee several years ago. This committee had representation from fire marshals, the Water Company and the sprinkler industry.

- II. All sprinkler systems, except limited area sprinkler systems (not more than 20 sprinklers within a fire area), are required to be provided with a post indicator valve (PIV). The PIV is required to be located in accordance with *NFiPA 24 - Standard for the Installation of Private Fire Service Mains*.

A post indicator valve is required on the sprinkler lead in.

1. PIV shall be not less than 40 ft. from buildings.
2. Top of the post shall be not more than 36 inches above grade.
3. PIV shall be properly protected against mechanical damage where needed.

- III. Inside and outside audible or visual alarm device required on all sprinkler systems, except for limited area sprinkler systems.

IV. All *automatic fire suppression system* control valves and *automatic fire suppression system* flow alarms, shall be supervised by one of the following methods:

1. Approved central station in accordance with NFiPA 71 listed in Chapter 35; or
2. Approved remote station in accordance with NFiPA 72 listed in Chapter 35.
3. Approved proprietary station in accordance with NFiPA 72 listed in Chapter 35.

**Exceptions:**

1. Underground gate valves with roadway boxes.
2. *Limited area sprinkler systems* (see Section 907.6.3).
3. Occupancies in Use Group R complying with Section 906.2.2 and supervised in accordance with NFiPA 13R listed in Chapter 35.

V. If you are installing a dry pipe system, you should note that the ICC® *International Building Code/2003* requires that dry pipe systems shall deliver water to the inspector's test pipe in not more than 60 seconds. Automatic air-pressure maintenance devices shall be capable of restoring normal operating pressure in the system within 30 minutes except for low-differential dry pipe systems where the maximum recovery time shall be 60 minutes. Before the water supply for a dry pipe system is turned on and the system is placed in service, the system shall be tested with air pressure of at least 40 psi and allowed to stand 24 hours with a maximum pressure loss of 12 psi.

VI. We will issue a separate permit for the underground fire main if you have timing problems and need to get started on the job before the sprinkler drawings are completed.

VII. **INSPECTIONS:** The standardized instructions on how to call in for inspections are applicable to sprinkler systems. We want to witness the required two-hour hydrostatic tests on the underground fire main and the actual sprinkler system. On the underground fire main, we prefer to do this while all of the pipe joints are exposed, although we realize this may not be possible in all cases. If you must cover the pipe prior to the hydrostatic test, please call us out for an inspection so we can verify that what has been done agrees with the approved plans. For the final inspection all of the required signing, flow alarms, audible devices and tamper switches shall be in place and fully operational. If the occupant is requesting a temporary occupancy permit (TOP), only the flow alarms and audible devices must be operational. The valves may be chained and locked for the TOP only.

VIII. **LIMITED AREA SPRINKLER SYSTEMS:** Limited area sprinkler systems are required to be hydraulically calculated in accordance *NFiPA 13* when supplied from the domestic water supply for the building. The hydraulic design shall also include the domestic demand based on the *International Plumbing Code*. If the building is equipped with a standpipe system sized for a 500-gallon-per-minute minimum flow and has an automatic water supply, the limited area sprinkler system shall be connected to the standpipe system. Since a backflow preventor is required by others, the valves must be of an indicating type and shall be chained and locked open. Alarms and alarm attachments are not required. All limited area sprinkler systems, except those connected to a standpipe system, shall be hydrostatically tested for a minimum of 15 minutes without visible leakage at the working pressure under which the system is to be used. If the limited area sprinkler system is supplied by a building standpipe system, the *normal* hydrostatic guidelines of *NFiPA 13* and *NFiPA 14* would apply.