SPRINKLER CONTRACTORS INFORMATION GUIDE

HIGH RIDGE FIRE PROTECTION DISTRICT

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Sprinkler Contractor's Information Guide

INTRODUCTION

This informational guide is intended to be used by the design professional, building owners and sprinkler contractors that are involved with the construction of commercial occupancies.

The information provided is to help with the details and guidelines we are looking for in the construction plans, on-site inspections to be performed and final testing procedures.

All items listed in this handout are just a few things that are required; please refer to current IBC, IFC, and NFPA manuals for all other requirements.

This informational packet has been designed to make the process easier through plan review, and to address any issues that you may have through this process. Our goal is to make the process quicker and more effective for all entities involved.

The code sections listed are from the 2015 International Building Code (IBC) and 2015 International Fire Code (IFC) unless specified on letter form.

PERMIT & DESIGN INFORMATION

The High Ridge Fire Protection Districts current codes:

The High Ridge Fire Protection District is currently using the 2015 International Building Code (IBC) and the 2015 International Fire Code (IFC) as modified and amended by Ordinance # 50. The Fire Prevention Code of the High Ridge Fire Protection District.

The most current edition of NFPA 13 standard for the Installation of Sprinkler Systems, and the most current edition of NFPA 24 Installation of private fire service mains and their appurtenances.

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Permit Process:

1. The requirements through the submittal of plans are 2 sets of signed and sealed engineered stamped plans.
2. Application form filled out with all proper information including construction cost and proper addressing of job to be performed.
3. Permit fees must be paid for at the time the permit is issued and picked up.
4. Approved plans must be on site during construction for review.

Scheduling of Inspections:

Contractor **shall** notify the High Ridge Fire Protection Districts Fire Marshal's office to schedule all inspections.

When scheduling an inspection contact must be made at least 48 hours before inspection is to be completed.

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Methods of Restraining Fire Mains:
Thrust blocks where soil is suitable.
Requirements should be met out of NFPA 13-Section 6-3.2, 10.8.2and NFPA 24 Section 10.8.2.

Other types of Joint restraints may be used such as…
-Locking mechanical or push-on joints.
-Mechanical joints utilizing setscrew retainer glands.
-Bolted flange joints.
-Heat-fused or welded joints.
-Pipe clamps and tie rods.
-Other approved methods.

Requirements shall be met from NFPA 13 section 6-3.3, NFPA 13 Section 10.8.3, and NFPA 24 Section 10.1.1.

Scope:

This information packet provides the minimum information to conduct flushing main supply pipe to a private hydrant or to a sprinkler system riser. Contractors and other agencies are responsible for the research of other publications for additional information and to train their personnel in the correct testing procedures.

Purpose:
Properly performed flushes provide results that help ensure that debris in the pipe has been removed and will not compromise the operation of the sprinkler system or damage a fire pump.

Equipment needed for flushing of underground fire main:

1. Burlap bag is required to collect debris and rocks that might cause damage to a building or a vehicle.
2. Hose Monsters to divert water
3. Reference: NFPA 24 and "Fire Protection Hydraulics" FPP, OSU.

Flushing Procedures:

1. Minimum flow rate shall be not less than one of the following methods.

    A. Hydraulically calculated water demand flow rate of the system, including any hose requirements.
    B. Flow necessary to provide a velocity of 10ft/sec per table 10.10.2.1.3
    C. Maximum flow rate available to the system under fire conditions.
2. Underground mains and lead-in connections to systems risers should be flushed through hydrants at the dead-end of the system **or** through accessible aboveground flushing outlets.
3. Flush for 20 minutes until the water is clear.
4. Attach a burlap bag to the outlet port(s) to capture any debris and to minimize damage to the surrounding ground.
5. The flow should obtain a minimum velocity of 10 ft/sec which is necessary for cleaning the pipe and lifting debris to an outlet.
6. Achieving the minimum flow rate shall be verified using a pitot gauge in case a street valve or isolation valve is partially closed.

Table 10.10.2.1.3 NFPA 24

Pipe Size (inches)	Flow Rate (gpm)	PSI for 4" Outlet
4	390	2
6	880	5
8	1,560	11
10	2,440	26
12	3,520	55

-Flushing must continue for 20 minutes or a sufficient amount of time to clear obstruction.

Hydrostatically testing of underground fire main piping

1. Notify the AHJ and owners representative of the time and date of the test.
2. Perform all required acceptance tests.
3. Complete the **Contractors Material and Test Certificate** and signed by the contractor and the owners representative.
4. Backfill the trench between joints to prevent movement.
5. Where required for safety, backfill the trench completely.
6. The contractor is responsible to perform a pretest on the system and find and correct problems in the fire main.
7. System must be charged to 200 psi for two hours
   -50 psi in excess of static pressure over 150 psi
   -Leakage shall not exceed 2 quarts per hour per 100 gaskets or joints.

Additives:

At **NO** time should additives, corrosive chemicals, such as sodium silicate, brine, or other chemicals be used while hydrostatically testing the system, or for stopping leaks.

Safety Considerations:

Excavations exceeding 5 ft. in depth require sloping, shoring or shielding unless it is solid rock.

At anytime if you have any questions or concerns please feel free to contact my office. Email – rtisius@highridgefire.com or 636-677-3371 ext. 157.