



Benicia Fire Department – Fire Prevention Policies

Subject: **INSPECTION AND TESTS OF PRIVATE FIRE SERVICE MAINS AND SPRINKLER UNDERGROUND SUPPLY LINE INSTALLATIONS**

Section: B

Effective Date: April 2, 2009

Standard B-202 Page: 1 of 4

Revised Date: July 1, 2015

Authority: Benicia Municipal Code Chapter 8.28 National Fire Codes, Standards 13 and 24 (Editions as Adopted by the CFC), City of Benicia Public Works Standards.

Plan Approval Required: Review and approval of design and installation of fire service mains, sprinkler system underground supply lines and their appurtenances.

Fees: Based on Resolutions – Chapter 1.20, Section 1.20.010 B.M.C., contact Fire/Life Safety Division.

DEFINITIONS:

APPROVED means acceptable to the authority having jurisdiction.

AUTHORITY HAVING JURISDICTION is the City of Benicia, Fire and Life Safety Division.

LISTED means equipment or materials included in a list published by an organization acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of listed equipment or materials and whose listing states either that the equipment or material meets appropriate standards or has been tested and found suitable for use in a specified manner.

PRIVATE FIRE SERVICE MAIN as used in this standard is that pipe and its appurtenances on private property between the system side of the double check detector assembly and the base of the riser (flange or flange and spigot piece or base tee) for automatic sprinkler systems, open sprinkler systems, water spray fixed systems, standpipe systems, inlets to foam making systems or the base elbow of private hydrants or monitor nozzles. When connected to a public water system, the private service main begins at a point designated by the public water utility, usually at a manually operated valve near the property line.

SHALL indicates a mandatory requirement.

SHOULD indicates a recommendation, which is advised but not required.



Benicia Fire Department – Fire Prevention Policies

Subject: **INSPECTION AND TESTS OF PRIVATE FIRE SERVICE MAINS AND SPRINKLER UNDERGROUND SUPPLY LINE INSTALLATIONS**

Section: B

Effective Date: April 2, 2009

Standard B-202 Page: 2 of 4

Revised Date: July 1, 2015

STANDARD means the rules and regulations contained in the City of Benicia Fire/Life Safety Division Standards and are designed to provide specific guidelines to California Fire Code requirements.

INSPECTION AND TESTING REQUIREMENTS

Inspection is required by the Fire/Life Safety Division. Guidelines for the inspection of underground fire service mains/lines shall comply with the following guidelines:

VISUAL

1. Pipe shall be uncovered for the inspection with all fittings, thrust blocks, valves and other appurtenant devices exposed.

FLUSHING

1. All underground piping shall be thoroughly flushed to remove all dirt, gravel and any other debris that might enter the fire protection system overhead piping and obstruct the water flow into the system.
2. Flushing shall be performed at a rate of not less than 10 feet per second. Minimum rates should conform to Table 1. The flow should be maintained until no debris can be heard striking the bonnet (for at least one minute) but in no case should the flush be performed for less than five (5) minutes.

TABLE 1 (TABLE 10.10.2.1.3, NFPA #24)

PIPE SIZE	GPM	FLOW RATE LITERS/MIN.
* 4 inch	390	1476
6 inch	880	3331
8 inch	1560	5905
10 inch	2440	9235
12 inch	3520	13323



Benicia Fire Department – Fire Prevention Policies

Subject: **INSPECTION AND TESTS OF PRIVATE FIRE SERVICE MAINS AND SPRINKLER UNDERGROUND SUPPLY LINE INSTALLATIONS**

Section: B

Effective Date: April 2, 2009

Standard B-202 Page: 3 of 4

Revised Date: July 1, 2015

- * Lead-in connections only
- 3. An appropriate transition piece shall be provided for the flush. Recommended materials include a flange with a 90-degree elbow, which can be adapted to either 2.5” fire hose, which is the minimum size acceptable, or whatever size pipe is required to provide adequate flow based on the required flow from Table 1.
- 4. When the water supply will not produce the stipulated flow rate, connection to a hydraulically designed system may be flushed at the demand rate of the system, including hose streams, if they are supplied from that connection. Non-calculated and pipe schedule systems shall be flushed at the maximum flow rate available.
- 5. All water shall be dechlorinated prior to discharge into the public storm or sewer system and follow the “Water Based Fire Protection Systems Discharge Best Management Practices Manual.”

HYDROSTATIC TESTING

1. All new lines shall be tested by an approved hydrostatic test method. Approved methods include:
 - A. Pressurization will be made by use of a water pump. Motive force may be supplied by internal combustion, electrical or manual means.
2. All lines shall be pressurized to 200 psi and must maintain that pressure for a minimum of two (2) hours. If the anticipated static pressure for the line is greater than 200 psi, the test pressure used shall be 50 psi in excess of the anticipated maximum static pressure.

NOTE: Prior to pressurization of the system, the trench must be backfilled and compacted in accordance with Fire/Life Safety Division Standard B-201 and Department of Public Works Standards.

All tests shall be called at least forty-eight (48) hours prior to the desired test. The contractor, or his representative, is responsible for the preparation for testing and must obtain all required permits and must be familiar with test requirements.



Benicia Fire Department – Fire Prevention Policies

Subject: **INSPECTION AND TESTS OF PRIVATE FIRE SERVICE MAINS AND SPRINKLER UNDERGROUND SUPPLY LINE INSTALLATIONS**

Section: B

Effective Date: April 2, 2009

Standard B-202 Page: 4 of 4

Revised Date: July 1, 2015

Inspectors will remain on-site for no more than ten (10) additional minutes if the test is not ready. Subsequent tests required, due either to lack or preparation on the part of the contractor or multiple failures occurring as a result of poor workmanship, will result in additional inspection fees.