



## Benicia Fire Department – Fire Prevention Policies

### Subject: PLAN REVIEW OF INSTALLATION OF THE OVERHEAD PORTION OF AUTOMATIC FIRE SPRINKLER SYSTEMS

**Section: B**

**Effective Date:** April 2, 2009

**Standard B-203**

**Page:** 1 of 6

**Revised Date:** July 1, 2015

**Authority:** Benicia Municipal Code Chapter 8.28, National Fire Codes Standards 13, 13D, 13R, (Editions as adopted by the CFC), California Building Code and City of Benicia Fire and Life Safety Standards B-201 and B-202.

**Plan Approval Required:** Review and approval of design and installation of automation fire sprinkler systems and all devices appurtenant to such systems

**Fees:** Based on Resolution – Chapter 1.20, Section 1.20.010 B.M.C., Contact Fire and 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.

**SHALL** indicates a mandatory requirement.

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

**SPRINKLER SYSTEM**, for fire protection purposes, is an integrated system of underground and overhead piping designed in accordance with fire protection engineering standards. The installation includes one or more automatic water supplies. The portion of the sprinkler system above ground is a network of specially sized or hydraulically designed piping installed in a building, structure or area, generally overhead, and to which sprinklers are attached in a systematic pattern. The valve controlling each system riser is located in the system riser or its supply piping. Each



## Benicia Fire Department – Fire Prevention Policies

### Subject: PLAN REVIEW OF INSTALLATION OF THE OVERHEAD PORTION OF AUTOMATIC FIRE SPRINKLER SYSTEMS

Section: B

Effective Date: April 2, 2009

Standard B-203

Page: 2 of 6

Revised Date: July 1, 2015

sprinkler system riser includes a device for activating an alarm when the system is in operation. The system is usually activated by heat from a fire and discharges water over the fire area.

**STANDARD** means the rules and regulations contained in the Benicia Fire Department's Fire and Life Safety Division's Standards and are designed to provide specific guidelines to California Fire Code requirements.

### PLAN REVIEW

Approval of the design and installation is required prior to starting any work. Prior to issuance of a permit, the application must submit plans for approval and the plans must be approved by the authority having jurisdiction.

Plans shall be submitted to the Division with each application and shall include the following details:

1. A site plan, drawn to scale, indicating such details as:
  - (a) An information block identifying:
    - i) Name of project
    - ii) Owner and/or occupant of building
    - iii) Street address
    - iv) Building construction type
    - v) Qualifications of designer (type of engineer, license number(s), certifications, experience, etc.)
    - vi) Qualifications or installer (type of contractor, license number(s), certifications, experience, etc.)
  - (b) Point of compass



## Benicia Fire Department – Fire Prevention Policies

### Subject: PLAN REVIEW OF INSTALLATION OF THE OVERHEAD PORTION OF AUTOMATIC FIRE SPRINKLER SYSTEMS

**Section: B**

**Effective Date:** April 2, 2009

**Standard B-203**

**Page:** 3 of 6

**Revised Date:** July 1, 2015

- (c) Full height of cross section
  - (d) Shop drawings identifying the underground supply line(s)
    - i) If the underground installer is other than the sprinkler designer, the name of the underground designer/installer shall be included on the drawings.
    - ii) The underground plans/installation shall conform to Fire and Life Safety Division Standard B-201 and B-202.
2. The actual sprinkler drawings shall include the following:
- (a) An information block identifying:
    - i) Total design density and Area of Operation (A.O.O.) the area of most demand. The A.O.O. shall be indicated on the drawings by highlighting either the perimeter of the area or the whole area with a fluorescent highlighting pen.
    - ii) Total number of sprinkler heads (per floor where applicable).
    - iii) Make, type, temperature rating, nominal orifice diameter, K-factor and S.I.N. (Sprinkler Identification Number) for each different type of sprinkler head.
    - iv) Pipe type and schedule of wall thickness for all sizes and types of piping used.
  - (b) Location of all rooms, closets, bathrooms, etc.
  - (c) Type and location of alarm bells.
  - (d) Nominal pipe size and length.
  - (e) Location and size of all riser nipples.
  - (f) Type of fittings and joints and the location of all welds and bends.



## Benicia Fire Department – Fire Prevention Policies

### Subject: PLAN REVIEW OF INSTALLATION OF THE OVERHEAD PORTION OF AUTOMATIC FIRE SPRINKLER SYSTEMS

**Section: B**

**Effective Date:** April 2, 2009

**Standard B-203**

**Page:** 4 of 6

**Revised Date:** July 1, 2015

- (g) Types and locations of all hangers, sleeves, braces and any other methods of securing piping (hangers and braces shall be documented by either manufacturer's cut sheets or by drawings on or attached to the plans).
  - (h) All control valves, check valves, drainpipes and test connections.
  - (i) Size and location of all interior hose outlets and related equipment. Refer to Standard-206.
3. Additional submittal shall include:
- (a) Manufacturer's detail sheets indicating all pertinent data on all materials, equipment and devices intended for use in installation and testing of the system.
  - (b) State Fire Marshal's listing sheets/numbers for all materials, equipment and devices intended for use in installation and testing of the system. (If applicable).
  - (c) Reference to the design standard applied to the design and installation of the system.
  - (d) Information on the type of commodity to be stored, the configuration of storage (palletized piles, rack systems, etc.) and the anticipated height of storage.
4. Hydraulic calculation submittal shall include the following:
- (a) Job name, address and jurisdiction.
  - (b) Name of designer, employer name, certifications/qualifications, years of experience.
  - (c) Design criteria:
    - i) Occupancy classification
    - ii) Design density
    - iii) Area of operation



## Benicia Fire Department – Fire Prevention Policies

### Subject: PLAN REVIEW OF INSTALLATION OF THE OVERHEAD PORTION OF AUTOMATIC FIRE SPRINKLER SYSTEMS

**Section: B**

**Effective Date:** April 2, 2009

**Standard B-203**

**Page:** 5 of 6

**Revised Date:** July 1, 2015

- iv) Actual maximum coverage per head
  - v) Number of sprinklers calculated within areas of operation
  - vi) Total sprinkler water flow required
  - vii) Inside hose stream allowance
  - viii) Outside hose stream allowance
  - ix) Sprinkler type(s) and orifice size
  - x) Total water demand required
  - xi) Sprinkler “K” factor
- (d) All hydraulic calculation submittals shall include proof of most demanding head. In gridded or looped systems, calculations shall be submitted showing shift to the left and right of the hydraulically most demanding head in order to verify its demand status.
- (e) All reference points listed on the hydraulic calculations shall be indicated on the drawings. Markings should be clearly drawn in order to facilitate review and approval.
5. Penalties for failure to comply with any of the requirements of this standard shall result in the following:
- (a) If any work is performed without the written permission of the Fire Marshal, or a member of the Division, the building permit will be suspended until such time as such permission has been granted.
  - (b) If work is started prior to plans approval, subsequent plan submittal will be reviewed at twice the standard plan review fee.
  - (c) The second occurrence, within a twelve (12) month period, of fieldwork being initiated without approved plans and/or the written permission of the Fire Marshal



## Benicia Fire Department – Fire Prevention Policies

### Subject: PLAN REVIEW OF INSTALLATION OF THE OVERHEAD PORTION OF AUTOMATIC FIRE SPRINKLER SYSTEMS

**Section: B**

**Effective Date:** April 2, 2009

**Standard B-203**

**Page:** 6 of 6

**Revised Date:** July 1, 2015

will result in the contractor/installer being placed on a probationary status by the Division. Conditions of the probation will include:

- i) No work by any probationary contractor will be reviewed until his probationary status is discussed with the general contractor and the general contractor agrees to oversee his work and coordinate the appropriate inspections and tests.
- ii) The probationary contractor shall contact the Division staff on a regular basis to discuss any changes in local policy or standards that might affect fire protection equipment installations.
- iii) The probationary contractor notifies the Division staff when he/she intends to bid any fire protection equipment contracts.

If the probationary contractor completes the twelve (12) month probationary period and performs satisfactorily, he/she will be released from the conditions listed under Item (c).

- (d) The third occurrence within a twelve (12) month period, or any violation of the probationary requirements listed under Item (c), will result in revocation of the contractor's business license, work on the job site will be terminated and a written complaint will be forwarded to the State Contractor's License Board seeking revocation of the Contractor's State License.

The contractor may appeal this revocation but in no case will he/she be allowed to continue work in the City until final disposition of his/her appeal has been completed.