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| July 1, 2010  | <b>SANTA ROSA FIRE DEPARTMENT</b><br><b>FIRE PREVENTION BUREAU</b><br><b>INSPECTION CHECKLIST</b> |
|  | <b>FIRE SPRINKLER SYSTEMS</b><br><b>NFPA 13</b>   |

|   |              |                  |
|---|--------------|------------------|
| <b>Address:</b>                             |              | <b>Permit #:</b> |
| <b>Inspector:</b>                           | <b>Date:</b> | <b>Status:</b>   |
| <b>Inspector:</b>                           | <b>Date:</b> | <b>Status:</b>   |
| <b>A-Approved, R-Re-inspection Required</b> |              |                  |

**This Checklist outlines general requirements. Information contained herein applies to typical instances and may not address all circumstances.**

Reference numbers following worksheet statements represent an NFPA code section unless otherwise specified.

- |    | Y                        | N                        |   |
|----|--------------------------|--------------------------|---|
| 1. | <input type="checkbox"/> | <input type="checkbox"/> | Approved drawing and above-ground piping certification documents are on site.   |
| 2. | <input type="checkbox"/> | <input type="checkbox"/> | Underground supply testing and flushing is witnessed and underground piping certification is provided. Flushing requirements shall be 880 GPM for 6 in., 1,560 GPM for 8 in., 2,440 GPM for 10 in., 3,520 for 12 in., have them pitot and calculate that flow and confirm the velocity is at least 10 ft/sec. |
| 3. | <input type="checkbox"/> | <input type="checkbox"/> | Hydrostatic test: wet system, 200 PSI for 2 hours and it should include the FDC piping.   |
| 4. | <input type="checkbox"/> | <input type="checkbox"/> | Hydrostatic test: dry and double interlock system: 200 PSI for 2 hours and a 40 PSI air leak test for 24 hours with less than 1.5 PSI loss, 16.2.2.   |
| 5. | <input type="checkbox"/> | <input type="checkbox"/> | Backflow prevention device is installed in accordance with the approved set of plans and forward flow tested 16.2.5.  |
| 6. | <input type="checkbox"/> | <input type="checkbox"/> | Systems subject to pressures greater than 150 PSI shall be hydrostatically tested at 50 PSI above system working pressure, 16.2.1.2.  |
| 7. | <input type="checkbox"/> | <input type="checkbox"/> | Operational test of the dry-pipe valve is performed and the quick opening device (500+ gallon systems) is tested, 750+ gallon system must trip within 60 seconds.   |
| 8. | <input type="checkbox"/> | <input type="checkbox"/> | PRVs are tested at maximum and normal inlet pressures or as specified by the manufacturer, the supply pressure is recorded on the certificate, a relief valve is on the discharge side and gauges on each side of the valve, 16.2.4.  |

**RISER ROOM**

- |    |                          |                          |   |
|----|--------------------------|--------------------------|---|
| 9. | <input type="checkbox"/> | <input type="checkbox"/> | The main drain is routed to the exterior with a turned down elbow or an inside drain capable of handling the water flow. A flow test is performed. The main drain pipe is ¾ in. or greater for a riser up to 2 in., 1¼ in. or greater for a riser 2½ in. to 3½ in., 2 in. for a riser 4 in. or greater, 8.15.2.4, 16.2.3.4. |
|----|--------------------------|--------------------------|---|

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- | <b>Y</b> | <b>N</b>                 |   |
|----------|--------------------------|---|
| 10.      | <input type="checkbox"/> | <input type="checkbox"/> Water control valves and flow switches are electronically supervised and tested, IFC 903.4 there are 7 exceptions: 13D systems, limited area systems, 13R systems where supply is common to the sprinkler and the domestic system. |
| 11.      | <input type="checkbox"/> | <input type="checkbox"/> Paddle type water flow is not allowed for dry, preaction or deluge systems.  |
| 12.      | <input type="checkbox"/> | <input type="checkbox"/> 24 hour monitoring service agency or remote supervising station or proprietary supervising station received signals, IFC 903.4.1.  |
| 13.      | <input type="checkbox"/> | <input type="checkbox"/> Water flow alarm is tested and initiates an alarm within 5 minutes, located in accordance with the approved set of plans, and it is properly signed, 16.2.3.1.   |
| 14.      | <input type="checkbox"/> | <input type="checkbox"/> High-rise: each floor system shall have water flow device with a test connection and be connected to the fire alarm system.  |
| 15.      | <input type="checkbox"/> | <input type="checkbox"/> Permanent system identification signs for each control valve and what portion of the building each valve serves is provided, 6.7.4.  |
| 16.      | <input type="checkbox"/> | <input type="checkbox"/> Permanent hydraulic nameplate is attached to the riser, 16.5.1.  |
| 17.      | <input type="checkbox"/> | <input type="checkbox"/> Riser in a multistory structure is supported at the lowest level, each alternate level, above and below offsets, and at the top, 9.2.5.3.  |
| 18.      | <input type="checkbox"/> | <input type="checkbox"/> If flexible couplings are used, supports above the lowest level are designed in accordance with the approved plans to prevent an upward thrust of the piping, 9.5.3.2.   |
| 19.      | <input type="checkbox"/> | <input type="checkbox"/> Gauges are above and below riser check valve, 7.1.1.2.   |

**FDC**

- |     |                          |   |
|-----|--------------------------|---|
| 20. | <input type="checkbox"/> | <input type="checkbox"/> FDC capped and permanently signed with system type, the required pressure to support the system if the pressure demand is equal to or greater than 150 PSI, and area or building served, 8.16.2.4.7. |
| 21. | <input type="checkbox"/> | <input type="checkbox"/> FDC has check valve and drip valve, 8.16.2.5.  |
| 22. | <input type="checkbox"/> | <input type="checkbox"/> FDC for wet single riser system connects to the system side, 8.16.2.4.   |
| 23. | <input type="checkbox"/> | <input type="checkbox"/> FDC for wet multi-riser system connects after the main system shutoff valve, 8.16.2.4.   |
| 24. | <input type="checkbox"/> | <input type="checkbox"/> FDC for dry system connects between the indicating and dry-pipe valves.  |
| 25. | <input type="checkbox"/> | <input type="checkbox"/> FDC pipe complies with the size indicated on the plans; FDC is 18 in. to 48 in. above grade and properly supported 8.16.2.   |

**SPRINKLERS**

- |     |                          |  |
|-----|--------------------------|--|
| 26. | <input type="checkbox"/> | <input type="checkbox"/> Spare sprinklers – Provide at least 6 spare sprinklers for systems designed with 300 or less sprinklers; 12 spare sprinklers for system designed using 300 to 1000 sprinklers, and 24 spare sprinklers for systems designed using more than 1000 sprinklers, 6.2.9. |
| 27. | <input type="checkbox"/> | <input type="checkbox"/> Replacement wrench(s) are provided, 6.2.9.  |
| 28. | <input type="checkbox"/> | <input type="checkbox"/> Sprinklers shall be a minimum of 4 inches from the wall and be properly spaced, 8.6.3.3.  |

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- |     | Y                        | N                        |  |
|-----|--------------------------|--------------------------|--|
| 29. | <input type="checkbox"/> | <input type="checkbox"/> | Sprinkler is equipped with a guard if it subject to damage.  |
| 30. | <input type="checkbox"/> | <input type="checkbox"/> | Sprinklers are not painted or covered.   |
| 31. | <input type="checkbox"/> | <input type="checkbox"/> | ESFR upright deflectors are a minimum 7 in. above the top of the pipe, 8.12.5.3.2.1.   |
| 32. | <input type="checkbox"/> | <input type="checkbox"/> | EFSR sprinklers are at least 1 ft. horizontally from the bottom edge of bar joist or open truss and at least 3 ft. above the top of the storage level, 8.12.6. |
| 33. | <input type="checkbox"/> | <input type="checkbox"/> | The proper type and temperature sprinklers are used and match plans.   |
| 34. | <input type="checkbox"/> | <input type="checkbox"/> | Escutcheon plates are installed.   |
| 35. | <input type="checkbox"/> | <input type="checkbox"/> | Sprinklers are not obstructed, 8.5.5-8.12.5.   |

**PIPE: HANGERS, SEISMIC, AND PENETRATIONS**

- |     |                          |                          |  |
|-----|--------------------------|--------------------------|--|
| 36. | <input type="checkbox"/> | <input type="checkbox"/> | Piping layout and pipe size are the same as the plans.   |
| 37. | <input type="checkbox"/> | <input type="checkbox"/> | Pipe penetrations have proper clearance 2 in. for pipe 1 in. to 3½ in., 4 in. for pipe 4 in. and larger, 9.3.  |
| 38. | <input type="checkbox"/> | <input type="checkbox"/> | When flexible couplings are used in risers, above and below floor penetrations of multi-story structures, near penetrations of concrete or masonry walls, and near expansion joints, their location is in accordance with Section 9.3.2.3 (1)-(4). |
| 39. | <input type="checkbox"/> | <input type="checkbox"/> | Minimum clearance around pipes penetrating construction element listed in 9.3.4.1 is in accordance with 9.3.4.2 unless the requirements of 9.3.4.3 – 9.3.4.5 are met.  |
| 40. | <input type="checkbox"/> | <input type="checkbox"/> | A seismic separation assembly is provided at building seismic joints, 9.3.3.   |
| 41. | <input type="checkbox"/> | <input type="checkbox"/> | Lateral sway bracing spacing is in compliance with the approved set of plans, 9.3.5.3.3<br>Special CA amendment <i>“Lag screws or powder-driven fasteners shall not be used to attach braces to the building structure.”</i>                       |
| 42. | <input type="checkbox"/> | <input type="checkbox"/> | Lateral sway bracing is within 20 ft. of the end of the pipe, 9.3.5.3.2.<br>Special CA amendment <i>“where pipe is used for sway bracing, it shall have a wall thickness of not less than Schedule 40.”</i>  |
| 43. | <input type="checkbox"/> | <input type="checkbox"/> | Spacing does not exceed 80 ft. for longitudinal sway bracing, which is required for feed and cross mains, and the last brace is within 40 ft. of the end of the pipe, 9.3.5.4.1 and 9.3.5.4.3.   |
| 44. | <input type="checkbox"/> | <input type="checkbox"/> | A four-way sway brace spacing is not greater than 25 ft. and a four way brace is located at the top of the riser if the top of the riser exceeds 3 ft. in length, 9.3.5.5.   |
| 45. | <input type="checkbox"/> | <input type="checkbox"/> | Longitudinal and lateral bracing is provided for each run of pipe between the change of pipe direction unless the pipe run is less than 12 ft., 9.3.5.11.  |
| 46. | <input type="checkbox"/> | <input type="checkbox"/> | Sprigs greater than 4 ft. are restrained from lateral movement, 9.3.6.5.   |
| 47. | <input type="checkbox"/> | <input type="checkbox"/> | Splayed seismic bracing wire, wrap-around u-hooks, or lateral sway bracing shall not exceed 30 ft. spacing and are used to restrict sprinkler movement that could impact the building, equipment or finishing materials, 9.3.6.4.                  |

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- |     | Y                        | N                        |   |
|-----|--------------------------|--------------------------|---|
| 48. | <input type="checkbox"/> | <input type="checkbox"/> | Restraining straps are on all C-clamps and the strap is bolted through if there is not a lip on the beam, 9.3.7.1.                                    |
| 49. | <input type="checkbox"/> | <input type="checkbox"/> | Branch lines have one hanger per section of pipe, 9.2.3.2.  |
| 50. | <input type="checkbox"/> | <input type="checkbox"/> | Mains and cross mains have one hanger between each branch line and at the end of the main.  |
| 51. | <input type="checkbox"/> | <input type="checkbox"/> | The maximum distance between the end sprinkler and hanger is 36 in. for 1in. pipe, 48 in. For 1 ¼ in., and 60 in. for 1½ in. pipe and greater, 9.2.4. |
| 52. | <input type="checkbox"/> | <input type="checkbox"/> | Risers in multistory buildings have supports at the lowest level, at each alternate level, below offsets, and at the top, 9.2.5.3.                    |
| 53. | <input type="checkbox"/> | <input type="checkbox"/> | Risers in vertical shafts or buildings with ceiling greater than 25 ft. have support for each pipe section.   |
| 54. | <input type="checkbox"/> | <input type="checkbox"/> | Hangers are not within 3 in. of upright sprinklers, 9.2.3.3.  |

**DRY AND PRE-ACTION SYSTEMS**

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|-----|--------------------------|--------------------------|---|
| 55. | <input type="checkbox"/> | <input type="checkbox"/> | Dry system compressor, fill line, pressure gauges, check valve and shutoff valve and relief valve are installed in accordance with 7.2.6.2. The system fills the system within 30 minutes, 7.2.6.2.2. |
| 56. | <input type="checkbox"/> | <input type="checkbox"/> | Preaction and deluge systems are tripped by activation of the detection system.   |
| 57. | <input type="checkbox"/> | <input type="checkbox"/> | Riser room is heated, 7.2.5.  |
| 58. | <input type="checkbox"/> | <input type="checkbox"/> | Air pressure is set according to the manufacture instruction document or at least 20 PSI above the trip pressure, 7.2.6.7.1.  |
| 59. | <input type="checkbox"/> | <input type="checkbox"/> | Preaction systems exceeding 20 sprinklers shall be supervised in accordance with 7.3.2.3.1.   |
| 60. | <input type="checkbox"/> | <input type="checkbox"/> | Non-interlock and double interlock preaction systems supervise pipe pressure to maintain a minimum internal pressure of 7 PSI, 7.3.2.3.2.   |

**Additional Comments:**

|                  |                                   |   |               |
|------------------|-----------------------------------|---|---------------|
| Inspection Date: | Approved <input type="checkbox"/> | or Disapproved <input type="checkbox"/> | FD Inspector: |
| Inspection Date: | Approved <input type="checkbox"/> | or Disapproved <input type="checkbox"/> | FD Inspector: |
| Inspection Date: | Approved <input type="checkbox"/> | or Disapproved <input type="checkbox"/> | FD Inspector: |