21 13 00 - Fire Suppression Sprinkler Systems

Preference: Dry-Pipe Sprinkler Systems:
Use where water could damage equipment in room.

Standards: Alarm Devices:
Water-Motor Operated Alarm, Electrically Operated Alarm, Water-Flow Indicator, Valve Supervisory Switch, and Indicator-Post Supervisory Switch.

Sprinkler and Valves
• Flanged 175 psi minimum water pressure rating.
• Gate (2-1/2 inch and larger): Iron body, bronze fitted 175 lb. WWP, BB, OS & Y, solid wedge flanged. Standpipe valves required shall be size 2-1/2 inch and shall have hose ends with caps and chains as required by the Deputy State Fire Marshal, bronze finish outdoors.
• Check (2-1/2 inch and larger): Iron body, bronze fitted 175 lb. WWP, bronze disc, horizontal swing, BB, flanged.
• Gate (2 inch and smaller): Bronze 175 lb. WWP, block pattern, OS & Y, solid wedge, screwed ends.
• Sprinkler Heads - Heads subject to vandalism shall be protected with wire guards. Heads installed in hazardous storage areas shall be on-off type and shall be submitted to Deputy State Fire Marshall for approval.
• Escutcheons: Install for exposed to view pipe penetrations through finished partitions, walls and floors.
• Pressure Gauges: Dial type with 0-300 lb. range, with brass case, glass face and attachment.

Backflow Prevention Assembly (where required):
BECCO-Hersey, Watts, Febco or equal, reduced pressure type assembly, UL/FM approved and City of San Luis Obispo Public Works Engineering Standards approved and listed with OS & Y gate valves and tamper switches.

Execution
• Piping runs shall be checked beforehand and with other trades to insure clearance. Provide maximum head room and run piping to maintain proper clearance for maintenance and to clear openings in exposed areas. Piping shall be run in strict coordination with mechanical ducts and equipment, structural, and architectural conditions.
• Cutting structural members for passing sprinkler pipe or supports will not be permitted except with approval from the University.
• Piping fittings shall not be located over electrical machinery or equipment, unless adequate insulating protection (16-gauge galvanized sheet metal pans with hemmed edges) is provided against drip caused by leaks.
• In general, shut-off valves shall be oriented so that the valve stem is horizontal. If valves controlling sprinkler systems are inaccessible or over an elevation of 7'-0" or greater above the finished floor or grade, install permanent ladders, clamped threads on risers, chain operators or similar devices to provide access to authorized personnel.
• Gate valves shall be installed with the position indicator located so it can easily be read, and the
  crank is within reach and easily operable.
• Supports - Provide seismic restraints for piping and equipment as required by NFPA and C.C.R. Title
  24, whichever is stricter.
• Inspector’s Test Connection - Provide test connections approximately 6 feet above the floor for the
  sprinkler system or portion of each sprinkler system equipped with an alarm device. Locate at the
  hydraulic most remote part of each system. Provide test connection piping to a location where the
  discharge will be readily visible and where water may be discharged without property damage.
  Provide discharge orifice of same size as smallest sprinkler orifice.
• Main Drain - Provide separate drain piping to discharge at set point outside building or to sight
  cones attached to drain of adequate size to readily receive the full flow from drain under maximum
  pressure. Main drain shall be piped to a sanitary sewer drain large enough to accept the full flow
  from the drain.
• Fire Department Connections - Provide connections approximately 3 feet above finish grade, of the
  University approved two-way type, with National Standard female 4” hose threads with plug, chain,
  and identifying fire department connection escutcheon plate. Connection shall be free standing (or
  wall mounted - coordinate with Fire Marshal).
• Flushing and disinfection - Disinfect potable portions of the Fire Protection System as required by
  the State Plumbing and Health Codes and the Deputy State Fire Marshal. Newly installed piping is to
  be kept isolated from the system until bacteriologically acceptable. If isolation is provided by a
  closed gate valve, pressure testing for leakage in the new facilities shall be conducted before
  bacteriological acceptance. The University shall designate method and sequence of connecting
  mains to minimize contamination danger.
• Tests - Tests shall be conducted at such times as directed by and in the presence of the University's
  Representative and the State Fire Marshal and shall be provided as required by NFPA-13, 24, and
  the State Fire Marshal. Piping shall be hydrostatically tested as required by NFPA-13 and NFPA-
  24 but not less than 150 psi for two (2) hours.
• Operating parts, including valves, water flow detectors, and valve supervisory switches shall be
  tested for proper operation.
• Contractor to submit system certification forms per NFPA-13