COMMERCIAL, RESIDENTAL, AND LIMITED AREA FIRE SUPPRESSION INSTALLATION APPLICATION SUBMITTAL REQUIREMENTS

For the installation of any size fire suppression system, a permit application, system design document, hydraulic calculation review and inspection fee amount, determined by the number of suppression heads for the protected area, shall be submitted by a licensed fire suppression contractor prior to the installation of said fire suppression system for the purpose of review, approval and permit issue. Systems shall be designed in accordance with National Fire Protection Association Standards 13, 13D or 13R.

A minimum of three sets of working plans and hydraulic calculation sheets shall be submitted for approval to the authority having jurisdiction before any equipment is installed or remodeled. Deviation from approved plans shall require permission of the authority having jurisdiction**. Plan review turnaround shall take a minimum of 5-7 days. Larger system may take additional time.**

Working plans shall be drawn to an indicated scale, on sheets of uniform size, with a plan of each floor, and shall show those items from the following list that pertain to the design of the system.

(1) Name of owner and occupant.
(2) Location, including street address.
(3) Point of compass.
(4) Full height cross section, or schematic diagram, including structural member information if required for clarity and including ceiling construction and method of protection for nonmetallic piping.
(5) Location of partitions.
(6) Location of firewalls.
(7) Occupancy class of each area or room.
(8) Location and size of concealed spaces, closets, attics, and bathrooms.
(9) Any small enclosures in which no sprinklers are to be installed.
(10) Size of city main in street and whether dead end or circulating; if dead end, direction and distance to nearest circulating main; and city main test results and system elevation relative to test hydrant).
(11) Other sources of water supply, with pressure or elevation.
(12) Make, type, model, and nominal K-factor of sprinklers.
(13) Temperature rating and location of high-temperature sprinklers.
(14) Total area protected by each system on each floor.
(15) Number of sprinklers on each riser per floor.
(16) Total number of sprinklers on each dry pipe system, preaction system, combined dry pipe-preaction system, or deluge system.

(17) Approximate capacity in gallons of each dry pipe system.
(18) Pipe type and schedule of wall thickness.
(19) Nominal pipe size and cutting lengths of pipe (or center-to-center dimensions). Where typical branch lines prevail, it shall be necessary to size only one typical line.
(20) Location and size of riser nipples.
(21) Type of fittings and joints and location of all welds and bends. The contractor shall specify on drawing any sections to be shop welded and the type of fittings or formations to be used.
(22) Type and locations of hangers, sleeves, braces, and methods of securing sprinklers when applicable.
(23) All control valves, check valves, drain pipes, and test connections.
(24) Make, type, model, and size of alarm or dry pipe valve.
(25) Make, type, model, and size of preaction or deluge valve.
(26) Kind and location of alarm bells.
(27) Size and location of standpipe risers, hose outlets, hand hose, monitor nozzles, and related equipment.
(28) Private fire service main sizes, lengths, locations, weights, materials, point of connection to city main; the sizes, types and locations of valves, valve indicators, regulators, meters, and valve pits; and the depth that the top of the pipe is laid below grade.
(29) Piping provisions for flushing.
(30) Where the equipment is to be installed as an addition to an existing system, enough of the existing system indicated on the plans to make all conditions clear.
(31) For hydraulically designed systems, the information on the hydraulic data nameplate.
(32) A graphic representation of the scale used on all plans.
(33) Name and address of contractor.
(34) Hydraulic reference points shown on the plan that correspond with comparable reference points on the hydraulic calculation sheets.
(35) The minimum rate of water application (density), the design area of water application, in-rack sprinkler demand, and the water required for hose streams both inside and outside.
(36) The total quantity of water and the pressure required noted at a common reference point for each system.
(37) Relative elevations of sprinklers, junction points, and supply or reference points.
(38) If room design method is used, all unprotected wall openings throughout the floor protected.
(39) Calculation of loads for sizing and details of sway bracing.
(40) The setting for pressure-reducing valves.
(41) Information about backflow preventers (manufacturer, size, type).
(42) Information about antifreeze solution used (type and amount).
(43) Size and location of hydrants, showing size and number of outlets and if outlets are to be equipped with independent gate valves. Whether hose houses and equipment are to be provided, and by whom, shall be indicated. Static and residual hydrants that were used in flow tests shall be shown.
(44) Size, location, and piping arrangement of fire department connections.

The working plan submittal shall include the manufacturer's installation instructions for any specially listed equipment, including descriptions, applications, and limitations for any sprinklers, devices, piping, or fittings.

Working Plans for Automatic Sprinkler Systems with Non-Fire Protection Connections.

Special symbols shall be used and explained for auxiliary piping, pumps, heat exchangers, valves, strainers, and the like, clearly distinguishing these devices and piping runs from those of the sprinkler system. Model number, type, and manufacturer's name shall be identified for each piece of auxiliary equipment.

Water Supply Capacity Information.

The following information shall be included:

(1) Location and elevation of static and residual test gauge with relation to the riser reference point
(2) Flow location
(3) Static pressure, psi (bar)
(4) Residual pressure, psi (bar)
(5) Flow, gpm (L/min)
(6) Date
(7) Time
(8) Test conducted by or information supplied by
(9) Other sources of water supply, with pressure or elevation

Water Supply Treatment Information.

The following information shall be included where required by

(1) Type of condition that requires treatment
(2) Type of treatment needed to address the problem
(3) Details of treatment plan

Hydraulic Calculation Forms.

Hydraulic calculations shall be prepared on form sheets that include a summary sheet, detailed worksheets, and a graph sheet