



FIRE SPRINKLER SYSTEM (NEW OR MODIFICATION) PERMIT APPLICATION

CITY OF MERCED
678 W. 18TH STREET
MERCED, CA 95340

INSPECTION SERVICES DEPARTMENT

PERMIT # _____ DATE: _____ APN # _____

JOB ADDRESS: _____

OWNER: _____ ADDRESS: _____

PHONE: _____ FAX: _____ EMAIL: _____

TENANT: _____ PHONE: _____

FAX: _____ EMAIL: _____

CITY: _____ STATE: _____ ZIP CODE: _____

CONTRACTOR NAME/ADDRESS: _____

CITY/STATE/ZIP: _____ PHONE: _____

FAX: _____ EMAIL: _____

CSCL: _____ CLASS: _____ CITY BUS. LIC. #: _____

DESIGNER'S NAME/ADDRESS: _____

CITY/STATE/ZIP _____ PHONE: _____

FAX: _____ EMAIL: _____

PRINT NAME: _____

SIGNATURE: _____ OWNER () CONTRACTOR () AGENT ()

VALUATION: _____

MY SIGNATURE AUTHORIZES THE CITY OF MERCED TO MAKE 'RED LINE' COMMENTS ON THE PLANS WHICH HAVE BEEN APPROVED BY THE DESIGNER IN ORDER TO EXPEDITE THE PLAN REVIEW PROCESS.

DEPOSIT: \$ _____ RECEIPT: _____ RECEIVED BY: _____

#OF PLAN SETS SUBMITTED: F _____ (MINIMUM 2 SETS)

NOTES: _____

ROUTED BY: _____

FOR OFFICE USE ONLY

TOTAL FEES

BUILDING PERMIT \$ _____
ENGINEERING FEES \$ _____

CUSTOMER NOTIFICATION: _____

Date stamp here ONLY

Fire Sprinkler Plan Review Submittal Requirements

Introduction

This document is intended to provide a model plan review checklist to serve the needs of professionals in preparing a complete initial submittal package for review and approval of fire sprinkler projects.

Much of the information contained in this document has been taken from the Fire Sprinkler System Plan Review Guide produced by the Office of the State Fire Marshal.

Basis for Requirements

The 2010 California Fire Code (CFC), Chapter 9, Section 901.2- Construction Documents – requires complete plans and specifications be submitted to the fire code official for review and approval prior to system installation.

Plans and specifications for fire sprinkler systems shall include, but not be limited to, a floor plan; full height cross section; floor plans; small plot plan showing size of city main in street and point of connection for sprinkler supply piping, and its pipe size; make, type, model, number of each, temperature, and nominal K-factor of sprinklers; pipe type and schedule of wall thickness; riser detail; type and locations of hangers, sleeves, braces and methods of securing pipe; calculation of loads for sizing and details of sway bracing; hydraulic calculations; and material data sheets.

Complete vs. Correct

While correctness will speed along the review/approval process in requiring fewer resubmission cycles, lack of completeness will prevent a review. The submittal package must be complete for a complete review/approval process to take place.

Installation Codes and Standards (including edition)

The codes and standards applicable to fire sprinkler installation and design requirements typically include references to NFPA 13 (the National Fire Sprinkler Code), 2010 Edition; specific sections of Title 24, 2010 Edition; Part 2, California Building Code; Part 3, California Electric Code; Part 4; California Mechanical Code; and Part 9, California Fire Code. References are also made to the current City of Merced Standard Designs. Applicable code references must be identified on the plan cover sheet.

Checklist

Each item on the checklist must be provided for a complete submittal. The submittal requirements for modifications to existing systems are the same as for new systems. The required submittal information for existing systems must come from as-built drawings or from field investigation. All Fire Sprinkler Shop Drawings submitted to the City of Merced Inspection Services Department for approval must include the checklist with each item checked off to confirm that the submittal was checked for completeness.

Plans (rolled or folded; minimum 2 sets)

(14.1.1) Working plans 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.

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

TOTAL NUMBER OF SPRINKLER HEADS TO BE INSTALLED/RELOCATED_____

- Title block includes the contractor's name, address, telephone number and stamp of the contractor's C-16 license number.
- Title block includes project site address and.
- Point of compass.
- A graphic representation of the scale used on all plans.
- 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.
- Floor plans show the entire project area, location of partition walls and location of fire rated walls.
- Name and room number of each area or room.
- Location and size of concealed spaces, closets, attics, and bathrooms.
- Any small enclosures in which no sprinklers are to be installed, and the code section of exception to coverage.
- Small plot plan showing size of city main in street and point of connection for sprinkler supply piping, and its pipe size.
- Make, type, model, number of each, temperature and nominal K-factor of sprinklers.
- Temperature rating and location of high-temperature sprinklers.
- Total area (square footage) protected by each system (riser) on each floor.
- Number of sprinklers on each riser per floor.

- Pipe type and schedule of wall thickness.
- 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.
- Riser detail.
- Size and location of standpipe risers, hose outlets, hand hose, monitor nozzles, and related equipment.
- Type and location of hangers, sleeves, braces, and methods of securing pipe.
- Calculation of loads for sizing and details of sway bracing.

Hydraulic Calculations (submitted on 8 1/2" x 11" sheets, Minimum 2 sets)

(NFPA 13 - 22.3.1) Hydraulic calculations shall be prepared on form sheets that include a summary sheet, detailed worksheets, and a graph sheet.

- Date
- Name and address of contractor or designer.
- Location
- Name of owner and occupant.
- Building number or other identification.
- Description of hazard or hazard category.
- System design requirements, as follows:
 - Design area of water application, ft² (m²)
 - Minimum rate of water application (density), gpm/ft² (mm/min)
 - Area per sprinkler, ft² (m²)
 - Total water requirements as calculated, including allowance for inside hose, outside hydrants, and water curtain and exposure sprinklers.
 - Equivalent pipe lengths of valve fittings.

(NFPA 13 - 22.3.4) Graph Sheet – A graphic representation of the complete hydraulic calculation shall be plotted on semi-exponential graph paper (Q1.85) and shall include the following:

- Water supply curve
- Sprinkler System Demand
- Hose demand (where applicable)

Material Data Sheets (Minimum 2 sets)

- All control valves, check valves, drain pipes, and test connections, with UL listings.
- Information about backflow preventers (manufacturer, size, type).
- Type and location of alarm bells.
- 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.
- Piping provisions for flushing.
- For hydraulically designed systems, the information on the hydraulic data nameplate.
- Hydraulic reference points shown on the plan that correspond with comparable reference points on the hydraulic calculation sheets.
- 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.
- The total quantity of water and the pressure required noted at a common reference point for each system.
- If room design method is used, all unprotected wall openings throughout the floor protected. **(NFPA 13 - 11.2.3.3)**