



Fire Department

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CITY OF REDONDO BEACH **FIRE SPRINKLER SUBMITTAL CHECK LIST**

Minimum copies of plans, calculations and manufacturer's data listing submittals to the City of Redondo Beach Fire Department is a minimum of three (3) complete sets, with each packaged individually by the submitter.

NOTE: Loose documents not attached to plans sets is not considered a packaged set.

Submittal of fire sprinkler "Working Plans" on all system types shall have the following minimum information (as they relate). All items listed below are addressed in NFPA 13-2002, Chapter 14, and the adopted Building Code, Fire Code and ordinances:

1. Name, address, phone number of the sprinkler contractor:
2. Name, address, phone number of the sprinkler Designer:
3. Name and complete address of project:
4. Location of scope of work project identified on a Plot/Site Plan):
5. Location of the work located within the building/structure:
6. Date of plan drawn:
7. Wet Stamp Contractors License which includes Number, Date of expiration with approved wet signature:
8. Point of Compass:
9. The scale used on all plans (If different for section details, than so indicate):
10. A graphic representation of the scale used on all plans:
11. If available or known at time of submittal, the name of proposed occupant:
12. Submittals on all listed equipment, devices and appurtenances installing.
13. Location and size of water supply from supply source connecting. Indicate whether dead-end or circulating and direction of flow:
14. Water supply design (flow) information showing test point/location(s):
15. Information showing all sources of water supply with flows:
They shall include:
 - a. Test conducted or water information provided by:
(If not by a local purveyor go onto the following).

- b. Time:
 - c. Date:
 - d. Hydrant #/location:
 - e. Static pressure in lbs.:
 - f. Residual pressure in lbs.:
 - g. Flow in (US) GPM:
 - h. Elevation/s:
- Note: Systems shall be hydraulically designed. All commercial system design areas shall have a safety margin of 5% (13D residential 10%) or more for water supply fluctuation as relating to daily/seasonal, simultaneous water usage, drought conditions, future demands, etc.
- 16. Show paved roads, fire lanes and parking:
 - 17. Show weight/class, size, length, and location of underground pipe. Materials, points of Connection/s to water supplies, type of valves, meters, devices, valve pit (pit detail to be included) depth of bury to top of pipe from finish grade:
 - 18. Thrust blocking locations showing gravity and bearing type and indicate suggested factor Type. (NFPA 13, 24):
 - 19. Show hydrant locations included in the Plot/Site Plan (hydrant distance to systems F.D.C. maximum of 300-0). (F.D.C. shall be located minimum 100-0 from Fire Department vehicle clear access)
 - 20. Indicate size, type, piping, drainage and location of F.D.C.:
 - 21. Show yard/exterior F.D.C. location/s on a Plot Plan:
 - 22. Provide data submittals and indicate size, manufacturer, model, location and type of backflow prevention:
 - 23. Provide data submittals and indicate size, manufacturer, model, location and type of water meter if applicable.
 - 24. Provide type of construction (definition) type per NFPA 13-3.7.1, A.3.7.1:
 - 25. Indicate location of walls, partitions, fire walls, sheer walls, draft stops, fire doors, glazing in fire walls, lintels (include width and depth), floor openings, blind spaces/cavities, closets, attics, bathrooms:
 - 26. Indicate size of concealed spaces, closets, attics and bathrooms, etc.:
 - 27. Address and identify any enclosures in which no sprinklers are to be installed:
 - 28. Occupancy classification of each area or room per NFPA 13-11.2.1, A-11.2.1. This is accomplished by providing the occupancy "use" of all room/s or areas:
NOTE: High Piled Combustible Storage (6 feet for High Hazard commodities and 12 for Class I through IV) must also be clarified under separate "High Piled Combustible Storage" form.
 - 29. How occupancy classification was determined. Indicate table or figure from which density and area were derived (example NFPA 13-11.2.3.2, Chapter 12 - etc.):

30. Provide system design data at each design area:
31. Hydraulic reference points shown on the plan shall correspond with comparable reference points on the hydraulic calculation sheets (refer to Hydraulic Calculation Submittal):
32. Provide Hydraulic calculations for all remote areas (refer to Hydraulic Calculation Submittal):
33. Provide the minimum rate of water application (density), the design area of water application, in-rack sprinkler demand and water required for hose streams, both inside and outside on the plan:
34. Indicate total quantity of water and the pressure required noted at a common reference point for each system:
35. Additions, modifications, supplies, routing, elevations, dimensions and changes to **existing systems** must be shown to make all conditions clear:
36. Indicate all duct work, ceiling layouts, lighting, diffusers, etc. which may effect the system coverage and for clarification:
37. Full height cross section and elevations or schematic diagram of facility for clarity, including ceiling construction:
38. Ceiling elevations shall be defined:
39. Relative elevations of sprinklers, junction points and supply for reference points:
40. If room design method is used, provide information of room rating, including self closing doors and indicate all unprotected wall openings throughout that floor:
41. Indicate location and type of inspectors test:
42. Show all valves required tamper supervision and flow alarm:
43. Indicate the location of alarming device/s. (Note: Outside horn/strobe shall be located within the vicinity of the FDC.):
44. Provide manufacturers data submittals identifying, model, type, size of: alarm valve, dry pipe valve, deluge, pre-action, riser manifolds, which shall be shown and identified on riser, section or zone details. They must include showing control valves, check valves, drain valves, relief valves, gauges, test connections:
45. Manufacturers information of all air supply equipment (include data submittals) and devices with detail of maintenance devices and connections:
46. Size, type, piping, drainage, location and elevation of hose outlets, hand hose and related equipment:
47. Show settings for pressure reducing valves at all levels:
48. Provide manufacturers data submittals with manufacture, model, type and nominal orifice size and SIN identified and quantity (number) of each sprinkler installing included on the plans Head Legend, of all areas addressed in the scope of work:
49. Temperature rating of all sprinklers which includes showing their locations:
50. Total area of protection by each system and each floor:

51. Spacing of sprinklers and number of sprinklers in each story or fire area:
52. Indicate number of sprinklers on each riser and each system by floors:
53. Provide the total number of sprinklers on each dry system, pre-action system, combined dry pipe pre-action system, or deluge system (extension to existing equipment/sprinklers installed must be included):
54. Indicate all pipe types and schedule of wall thickness on the plans (and shown on Hydraulic Calculation Submittal):
55. Nominal pipe size and lengths with center-to-center dimensions (Using cut lengths must be identified on the plans):
Note: Where typical branch lines prevail, it will be necessary to size only one typical line:
56. Provide location size and lengths (center-to-center) of all riser nipples:
57. Type of fittings, joints and location of all welds and bends. The contractor shall specify on the drawings any sections to be “shop welded” and type of fittings or formations to us:
58. Type and location of hangers, sleeves, braces, with engineered trapezes and methods of securing all piping:
59. Location spacing/points, directions and calculations on loads for sizing of sway bracing with materials detail shall be provided:
60. Earthquake zone of influence (worst case) shall be identified and calculated.
61. Provide detailed information for piping, valves, fill, test, drain, expansion/pressure relief, and connections with schematic or section on anti-freeze loops. Include type of solution, amount and volume with minimum temperature provided:
62. Include starting points where contractors work begins, (i.e. electrical by others, painting by others, underground by others, etc.):
63. Plans shall have column grid points identified and line numbers:
64. Provide main and line dimensioning to beams, columns, walls or related for design spacing verification:
65. Provide approximate capacity in gallons of each dry pipe system and include bulk piping and extensions (when applicable):
66. Indicate dry type system grades/slope on all main and line piping:
67. Show all drain locations and piping. Include size and type (required details if of a combination and/or drum type):
68. Provide location and method of monitoring all typical Control valves:
69. Provide elevations of all backflow prevention devices:
70. Provide dimension from floor through top of riser with pipe sizing of all risers by section detail/s of all devices. This includes supports, sway bracing, drains, test connections, gauges w/valves, alarm flow devices, backflow, forward flow piping, FDC piping and drains, flexible connections, underground connection fittings, etc.:

71. Provide material data sheets as may be required or requested for clarification, compatibility and usage:

NOTE: Fonts shall be no less than 10 points.

Submittal of Hydraulic Calculation Forms shall contain the following minimum information:

A. Summary Sheet (Cover attached to calculations):

1. Date:
2. Location:
3. Name of owner and occupant:
4. Building number or other identification:
5. Name, address, phone number of Contractor and designer:
6. Name of approving agencies:
7. Construction:
8. Occupancy:
9. System design requirements:
 - a. NFPA Pamphlet using:
 - b. Description of design hazard:
 - c. System type:
 - d. Design area of water application, ft².
 - e. Minimum rate of water application (density), gpm per sq ft.
 - f. Area per sprinkler designed, ft²:
 - g. K-factor:
10. Inside hose allowance, gpm:
11. Outside hose allowance, gpm:
12. Rack sprinkler allowance, gpm:
13. Limitations (dimension, flow and pressure) on extended coverage or other listed special sprinklers.
14. Total water requirements as calculated including allowance for inside hose, outside Hydrants, water curtain, rack and exposure sprinklers.

B. Detailed "Work Sheets" of computer printout or hand written shall contain the following minimum information:

1. Sheet number:
2. Sprinkler description and discharge constant (K).
3. Hydraulic reference points shall correspond with comparable reference points on the working plans:
4. Pipe size and type:
5. Pipe lengths center-to-center of fittings:

6. Equivalent pipe lengths for fittings and devices:
7. Friction loss in psi per ft of pipe:
8. Total friction loss between reference points:
9. In-rack sprinklers demand balanced to ceiling demand:
10. Elevation head in psi between reference points.
11. Maximum velocity pressure and location:
12. Notes to indicate starting points, reference to other sheets or clarify data shown:
13. Gridded systems remote (most demanding) area shall be verified hydraulically with a minimum of two additional sets of calculations except computer programs showing peaking of demand area friction loss.

Water supply information to be included if not provided by certificate from water purveyors:

1. Location and elevation of static and residual test gauge with relation to the riser reference points:
2. Flow location:
3. Static pressure, psi.
4. Residual pressure, psi.
5. Flow, gpm.
6. Date:
7. Time:
8. Test conducted by:
9. Test furnished by:
10. Other water supply sources with pressure or elevation:
11. Any and all related information to determine compliance to the CFC.