

# Fire Sprinkler Design Basis

**Required on New Systems and existing systems with a change in design basis or change in occupancy.**

(Under the supervision and direction of the design professional, a technician may perform system layout, prepare shop drawings and material submittals and perform supplemental calculations and other functions based on the design information provided by the engineer. The following example shows a design summary which could be used by the technician to perform system layout. The design professional shall stamp and signed the design summary/specification when it is to be used to direct a technician's layout work. All submittal documents prepared by the technicians must be reviewed and approved by the design professional. Documents submitted to Building and Fire Officials for permits may be Shop drawings and other documents prepared by a technician when a "Review stamp" is attached by the design professional. The work of the technician must follow the design strategy outlined and directed by the design professional. As noted above the documents outlining the design strategy must be stamped by the registered Engineer/Architect and the shop drawings and other supporting documents must bear a SUBMITTAL REVIEW stamp indicating review and approval from the originating design professional.)

## SAMPLE DESIGN SUMMARY DOCUMENT

1. Project: (address; scope)
2. Reason for Installation: Required by Building\Fire Code  
Required by Performance Based design\approved appeal or approved alternate method or material.  
Required by Risk Manager\Insurance Carrier  
Voluntary
3. Building Detail: (occupancy classifications, square footage, separated or non-separated mixed occupancy, stories; height; Heated\Unheated, Seismic zone)
4. Uses and their location in building:
5. Occupancy Hazard Classification per NFPA 13 or other standard:
6. Other Commodity information for storage areas (storage data, combustible\flammable liquids data, criteria from IFC Chapter 23, etc.)
7. Industrial Processes and/or Manufacturing Locations and Information:
8. Other Hazard\Risk Analysis:
9. Available Water Supply:
10. Design Specifications:  
Density or # heads in design area(s)  
Area(s) of application  
RTI (range or designation)  
System type(s) (wet, dry, preaction...)
11. Sprinkler Characteristics: (Type, orifice, temp, special coatings, etc).
12. Conceptual Layout (diagram or text sufficient to establish structural loading information) - Minimum details: (size and location of Riser, bulk mains, pump(s) if necessary, standpipe and outlets if necessary, fire department connection, backflow device.)
13. Seismic design loads: (quantify and identify who is providing structural design.)
14. Commissioning and/or Acceptance criteria.