



## Automatic Fire Sprinkler Systems

### Scope

This application pertains to the installation of automatic fire sprinkler systems in light, ordinary and extra hazard occupancies and for storage occupancies where the commodity is stored up to 12 feet high. For warehouses and speculative use buildings see high piled and rack storage section of this handout.

### Minimum Requirements for Construction Drawings

Plans which do not contain the minimum information required will not be accepted for plan check. Plans shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show that it will conform to the provisions of the adopted international codes and ordinances.

- Three (3) copies of plans (24" x 36", Or 30" x 42") must be submitted for Review.
- Copies shall all be the same size.
- Working Drawings – scale to 1/8" = 1'.
- Shall be drawn in indelible ink.
- Sheets that are cut and pasted, taped, Or that have been altered by any means (pen, pencil, marking pen, etc.) will not be accepted for plan check.
- Site Plans – scale to 1" = 20', or 40'
- Washington State law requires that any Registered professional who prepares or Supervises the preparation of drawings And construction documents stamp and Sign such documents.

### Other Checklists/Permits that may be required.

- ✓ Fire Prevention:  
Fire Pumps
- ✓ Building Division:  
Rack Permit

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### Project Name

#### General

- | Yes                      | No                       |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Is there a construction permit application on this project?   |
| <input type="checkbox"/> | <input type="checkbox"/> | Owner's name, address and telephone number.   |
| <input type="checkbox"/> | <input type="checkbox"/> | Contractor's name, address, telephone and fax numbers and Washington State Contractor's license number. |
| <input type="checkbox"/> | <input type="checkbox"/> | How many heads are you replacing? _____<br>How many new? _____  |
| <input type="checkbox"/> | <input type="checkbox"/> | For system with 50 or more new heads, a prior review by an approved agency is required.                 |

#### Documentation One Set

- | Yes                      | No                       |  |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | The design information to be included on the hydraulic Data nameplate – pipe Schedule/hydraulic calculations   |
| <input type="checkbox"/> | <input type="checkbox"/> | A summary sheet for the hydraulic calculations, including: <ul style="list-style-type: none"> <li>• Date</li> <li>• Location</li> <li>• Name of owner or occupant</li> <li>• Building identifier</li> <li>• Description of hazard</li> </ul> |

## Documentation (cont.)

- System design criteria
  - Design density
  - Area of discharge
- Total water requirements including:
  - Hose streams allowance.
  - Water supply information,
  - Source and data.
  - Detailed worksheets or computer
  - Printouts containing the following
  - Sheet number.
  - Sprinkler head description And discharge constant(K-Factor).
  - Hydraulic reference points Up to and including the Point of connection.
  - Flow in gallons per minute.
  - Pipe size.
  - Pipe lengths, center-to-center, of fittings.
  - Equivalent pipe lengths for fittings And devices.
  - Friction loss in psi per foot of pipe.
  - Total friction loss between Reference points.
  - In-rack sprinkler demand, If applicable.
  - Elevation head loss in psi Between reference points.
  - Required pressure in psi at each reference point.
  - Small hose stream demand.
- Other sources of supply, with quantity, pressure and elevation.
- Sway brace calculations for each type of brace used.

## Working Drawings

### Floor Plans

- | Yes                      | No                       |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Compass direction and clearly marked scale.         |
| <input type="checkbox"/> | <input type="checkbox"/> | Ceiling construction and Reflected ceiling plan.    |
| <input type="checkbox"/> | <input type="checkbox"/> | Full-height cross section.                          |
| <input type="checkbox"/> | <input type="checkbox"/> | Location of area and/or occupancy separation walls, |

partitions and stairway enclosures.

- |                          |                          |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Location and size of concealed spaces and closets.                      |
| <input type="checkbox"/> | <input type="checkbox"/> | Any questionable enclosures in which no sprinklers are to be installed. |
| <input type="checkbox"/> | <input type="checkbox"/> | Key Plan (location within existing structure, if applicable).           |

## Pipe, Valves, Fittings

- | Yes                      | No                       |  |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | Size of municipal or private water Main and whether dead-end or looped. If dead-end, direction and Distance to nearest circulating main. |
| <input type="checkbox"/> | <input type="checkbox"/> | Nominal pipe size and cut lengths of pipe or center-to-center Dimensions.  |
| <input type="checkbox"/> | <input type="checkbox"/> | Location and size of riser nipples.  |
| <input type="checkbox"/> | <input type="checkbox"/> | Type of fittings and joints.   |
| <input type="checkbox"/> | <input type="checkbox"/> | Type and location of hangers.  |
| <input type="checkbox"/> | <input type="checkbox"/> | Type, size and location of bracing including calculations and fasteners.   |
| <input type="checkbox"/> | <input type="checkbox"/> | All control valves, check valves, drains and test pipes.   |
| <input type="checkbox"/> | <input type="checkbox"/> | Total Area protected by each system on each floor.   |
| <input type="checkbox"/> | <input type="checkbox"/> | Make, type, model and size of alarm, dry-pipe valve, preaction, or deluge valve.   |
| <input type="checkbox"/> | <input type="checkbox"/> | Pipe type and schedule of wall thickness.  |

## Fire Sprinklers

- | Yes                      | No                       |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Make, type, and nominal orifice size of sprinklers.             |
| <input type="checkbox"/> | <input type="checkbox"/> | Temperature rating and location of high temperature sprinklers. |

## Miscellaneous Information

- | Yes                      | No                       |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Size and location of all hand-held hose, hose outlets and related equipment |
| <input type="checkbox"/> | <input type="checkbox"/> | Hydraulically most remote area(s)   |

- Hydraulic reference points (nodes).
- When a fire pump is employed provide submittal per NFPA 20.
- Location and type of fire department hose connection for supply.
- Location and type of backflow prevention device.

**Automatic Sprinklers Over Cooking Surfaces**

- | Yes                      | No                       |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Location and type of cooking appliances and char-broilers.                        |
| <input type="checkbox"/> | <input type="checkbox"/> | Type, location and configuration of duct, plenum and surface nozzles.             |
| <input type="checkbox"/> | <input type="checkbox"/> | Type, size and configuration of sprinkler piping.                                 |
| <input type="checkbox"/> | <input type="checkbox"/> | Clearance of surface nozzles over cooking surface                                 |
| <input type="checkbox"/> | <input type="checkbox"/> | Make, type and nominal orifice size of sprinklers.                                |
| <input type="checkbox"/> | <input type="checkbox"/> | Cross-sectional view of sprinklers in hood and duct.                              |
| <input type="checkbox"/> | <input type="checkbox"/> | Location of pendant sprinklers and frames in relation to deep fat fryers.         |
| <input type="checkbox"/> | <input type="checkbox"/> | Provision for water run-off control.  |
| <input type="checkbox"/> | <input type="checkbox"/> | Location of indicating-type control valve, test connection and water flow switch. |
| <input type="checkbox"/> | <input type="checkbox"/> | Means of limiting sprinkler flow to thirty (30) psi.                              |

**Flammable/Combustible Liquids**

- | Yes                      | No                       |  |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | Provide calculation for 20 minutes of flow <b>(number of heads in room/area * √P * K-Factor * 20 minutes)</b> plus single largest container. |
| <input type="checkbox"/> | <input type="checkbox"/> | Provide details and description of storage arrangement.  |

**High Piled, Rack Storage and Speculative Use Occupancies**

This section applies to storage occupancies with top of storage at 12' or more and speculative use buildings. It is applicable

whether or not material is store in racks or on the floor. For speculative Use buildings assume Class IV commodity, non-encapsulated, double row racks. For so-called 24 feet clear space warehouses, assume 19 feet to top of storage. For taller building design to protect available rack storage height.

- | Yes                      | No                       |  |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | Accurate description and classification of the commodity to be stored, including it's height, array, packaging, encapsulation, banding, or other storage method. State which sprinkler system design curve was utilized for design criteria. |
| <input type="checkbox"/> | <input type="checkbox"/> | Show draft curtains, smoke vent, with temperature ratings, and skylights on working plans.   |
| <input type="checkbox"/> | <input type="checkbox"/> | Show designated storage areas of idle pallets. State wood or plastic.  |

**Please read the information below and sign Before submitting your application.**

Your application shall be deemed complete only if this checklist is completed and submitted along with the submittal package. Submittals not accompanied by a checklist will not be accepted. Accuracy of the submittal package, including this checklist, is the responsibility of the applicant. Failure to submit an accurate submittal package will be considered an incomplete application by the Plan Reviewer. An incomplete submittal will result in a HOLD. A resubmittal (new submittal package) will be requires and always results in a delay.

***I have checked the applicable boxes and have included those requirements in my submittal.***

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Print Name

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Signature