



# Evansville Fire Department

## Sprinkler Plan Worksheet

This **Sprinkler Plan Worksheet** must be completed as part of your Sprinkler Plan Review Submittal Requirements. **A separate and individual worksheet must be sent in for each individual "Remote Area Design".** Please send a completed form (with appropriate signatures) to [rrankin@evansvillefiredepartment.com](mailto:rrankin@evansvillefiredepartment.com) & [gmain@evansvillefiredepartment.com](mailto:gmain@evansvillefiredepartment.com). Please contact our office with any questions at (812) 435-6235.

### PROPERTY INFORMATION

Building Name:

Building Address:

Owner's Name:

Owner's Address:

Owner's Phone Contact:

Owner's Email:

Owner's Fax:

### SYSTEM DESIGNER/CONTRACTOR

Company Name:

Company Address:

Contact Person (Designer):

Phone:

Fax:

Email:

Is the system designed by NICET a Level 3 or 4? ☐ Yes ☐ No

NICET Level 3 or 4 Registration # and Name:

System Designed by Registered Engineer? ☐ Yes ☐ No

Name of System Designed by Registered Engineer (*stamp included*) :

### GENERAL

This proposal represents:

- ☐ A new system being installed in the building  
☐ Extension of an existing system

- ☐ Modifications to an existing system  
☐ Other \_\_\_\_\_?

NFPA Standard used in the system design and proposed installation:

- ☐ NFPA 13 (2010 Edition- 675 IAC 28-1-5) ☐ NFPA 13R (2010 Edition- 675 IAC 28-1-6)  
☐ NFPA 13D ( \_\_\_\_\_ Edition)? ☐ Factory Mutual (675 IAC 12-6-11)

Type of Sprinkler System(s): (**Check all that apply**)

- ☐ Wet ☐ Dry ☐ Anti-Freeze ☐ Pre-Action ☐ Deluge ☐ Pre-Engineered or 13D & 13R System

All sprinkler head "specification sheets and UL Listings" are provided in the application. ☐ Yes ☐ No

Are sprinklers omitted in any area? ☐ Yes ☐ No

**If yes, allowed per:**

- ☐ Yes ☐ No ☐ N/A **NFPA 13** Omitted Area(s)? (*Specifically identify omitted areas in narrative space below*)  
☐ Yes ☐ No ☐ N/A **NFPA 13R** Omitted Area(s)? (*Specifically identify omitted areas in narrative space below*)

***Narrative of specific omitted area(s) along with specific NFPA 13/13R code requirement:***

List the number of floors (*including Basement*).

Is a standpipe/hose connection required? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Is a fire pump required or provided? <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, complete detailed "FIRE PUMP INFORMATION" section below)	
Are Fire Department Connections (FDCs) located in an approved location by the AHJ (New Buildings Only)? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Are FDCs located directly on exterior walls, provided with 5 in Storz with 30-degree downturn connections? (Buildings with existing sprinklers, undergoing renovation only) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	
Is any Post Indicator Valve (PIV) located directly on an exterior wall? (Buildings with existing sprinklers, undergoing renovation only) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	
Sprinkler system valves controlling the water supply, pumps, critical air pressures, and water-flow switches are electronically supervised per IBC 903.4. <input type="checkbox"/> Yes <input type="checkbox"/> No	
Are means available through a test header or other connections downstream of the backflow prevention device for full flow test per NFPA 25: 12.6.2.1 & NFPA 13:5-15.6.1 (2002 Edition)? <input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>OCCUPANCY CLASSIFICATION</b>	
Identify the fire sprinkler occupancy hazard classification: <input type="checkbox"/> Light Hazard <input type="checkbox"/> Ordinary Hazard Group 1 <input type="checkbox"/> Ordinary Hazard Group 2 <input type="checkbox"/> Storage <input type="checkbox"/> Extra Hazard Group 1 <input type="checkbox"/> Extra Hazard Group 2 <input type="checkbox"/> Special Occupancy (see note below) (Note- Special Occupancy Requirements for the system (Flammable/combustible liquids, oxidizers, etc.))	
<b>FLOW TEST INFORMATION</b>	
Date of Flow Test?	Company who performed?
Static Pressure:	Residual Pressure:
Flow in gallons:	Coefficient Factor Used:
<b>STORAGE INFORMATION (if applicable)</b>	
If storage information is "Not Applicable", skip this section and go to the FLOW TEST INFORMATION section below.	
If there is a storage occupancy, indicate the commodity classification: <input type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Class IV <input type="checkbox"/> Group A <input type="checkbox"/> Group B <input type="checkbox"/> Group C	
<b>PRESENCE OF HIGH-PILED and/or RACK STORAGE</b> <i>Packaging &amp; Storage Configuration</i>	
Encapsulation of Pallet Loads? <input type="checkbox"/> Yes <input type="checkbox"/> No	Rack or Pallet Storage? <input type="checkbox"/> Rack <input type="checkbox"/> Pallet
Aisle Width Dimension:	Flue Space Dimension:
In-Rack Sprinklers? <input type="checkbox"/> Yes <input type="checkbox"/> No	ESFR Sprinklers? <input type="checkbox"/> Yes <input type="checkbox"/> No
"High Piled" Combustible Storage over 12 feet high? <input type="checkbox"/> Yes <input type="checkbox"/> No	
"High Hazard Commodity" Storage over 6 feet high? (i.e., Group A Plastics, Idle Pallets, etc.) <input type="checkbox"/> Yes <input type="checkbox"/> No	
Maximum HEIGHT of Storage Planned? Feet _____ Inches _____	LENGTH of Aisle Width Planned? Feet _____ Inches _____
Where are Auxiliary Drains and Low Point Drains located? _____	
Presence of "Solid Shelving"? <input type="checkbox"/> Yes <input type="checkbox"/> No	Presence of "Hazardous Materials"? <input type="checkbox"/> Yes <input type="checkbox"/> No
Presence of other "Special Storage"? <input type="checkbox"/> Yes <input type="checkbox"/> No	Presence of "Antifreeze/Auxiliary Systems"? <input type="checkbox"/> Yes <input type="checkbox"/> No
<b>DESIGN SPECIFICATIONS</b>	
Type of System: <input type="checkbox"/> Hydraulically Calculated <input type="checkbox"/> Pipe Schedule (for areas 5,000 square feet or less and existing systems only)	

Water Supply for system determined by:

☐ Area/Density Curves ☐ Room Design Method

**Requirements for All Hydraulically Calculated Systems (*Area/Density Method*):**

What is the “**Design Area**” of Water Application specified?

What is the minimum rate of Water Application “**Density**” specified?

Please specify what type of sprinkler “density adjustments” (if any) have been calculated:

**Check All that Apply:**

☐ Quick Response Sprinklers ☐ Sloped Ceilings greater than **2 in 12** ☐ Dry Pipe & Double-Lock Pre-Action Systems  
☐ High Temperature Sprinklers ☐ Multiple Adjustments ☐ “Actual Ceiling Height” (\_\_\_\_Ft. and inches)

What is the maximum “area” per individual sprinkler specified (*per NFPA 13 or specific listing*)?

How many sprinklers are required in the “Design Area”? (*per specific listing or NFPA*)

**Formula:** **(Number of Sprinklers Required) = (Design Area of Sprinkler Application) ÷ (Coverage per Sprinkler Head)**

Provide mathematical equation here: \_\_\_\_\_

What are the actual formula numbers used to verify Remote Area “Size and Shape”?

**Formula:** **1.2√ Design Area= Minimum Length of Rectangle**

Provide mathematical equation here: \_\_\_\_\_

What is the maximum number of sprinkler heads per branch line?

**Formula:** **1.2√ Design Area = # of Heads on Branch Line**  
**“S” ( Ft measured along Branch Line)**

Provide mathematical equation here: \_\_\_\_\_

What is “In Rack” demand, storage applications (*if applicable*)?

**GPM**

What is the hose stream demand (*Inside & Outside*)?

**GPM**

What is the total required water required for the sprinkler system (*including hose demand*)?

Are there any “*combined sprinkler & standpipe*” systems in the building, and, if so, what are the minimum “pressure” requirements as outlined in NFPA 14?

What are the limitations (*dimension, flow, and pressure*) on extended coverage or other listed special sprinklers? (*if applicable*)

**Additional Requirements (*Room Design Method*)**

Design Density of Sprinkler meets 11-3.1.3 (NFPA 13 2010 Edition) (minimum of .10 gpm/s.f.)? ☐ Yes ☐ No

Based upon the room that creates the greatest water demand (*including corridors/hallways*)? ☐ Yes ☐ No

Room enclosure walls must have a fire rating equivalent to required water supply duration based upon the hazard?

☐ Yes ☐ No

Is there protection of openings provided per design criteria below?

☐ Yes ☐ No **Light Hazard:** Automatic or self-closing doors **or** includes room sprinklers plus 2 sprinklers in communicating space.

☐ Yes ☐ No **Ordinary & Extra Hazard:** Automatic or self-closing doors (*Required*) & wall rating (*not ceiling*) equivalent to appropriate enclosure rating.

☐ Yes ☐ No **If using a corridor for the room design method, are all of the following met:**

- Only applicable if one row of sprinklers is installed in corridor.
- Calculate 5 sprinklers if openings are protected.
- Calculate 7 sprinklers if openings are not protected.

☐ Yes ☐ No Are room design compartment sprinklers under a flat, smooth, horizontal ceiling?

**Additional Requirements (NFPA 13 R Systems- *Residential Sprinklers*)**

☐ Yes ☐ No The building is not more than 4 stories in height.

☐ Yes ☐ No Listed residential sprinklers are used in all residential portions (*dwellings*) of the building per UL 1626.

**Exception:** Listed quick response sprinklers may be used, provided that no more than 4 sprinkler heads are located within compartment or dwelling.

☐ Yes ☐ No Standard or quick response sprinklers shall be used in areas outside the dwelling unit.

**Exception:** Residential sprinklers shall be permitted in adjoining corridors or lobbies, provided with flat, smooth ceilings and ceiling heights not exceeding 10 feet.

**Design Discharge Criteria (based upon these two criteria: Inside & Outside Dwelling):**

☐ Yes ☐ No **Inside Dwelling Unit**

- Residential sprinkler heads only (*very small units may use QR Heads*)
- GPM not less than 18 gpm per single operating sprinkler and 13 gpm for multiple sprinklers within a compartment (per NFPA), or per specific listing
- **Density required at 4 most hydraulically demanding at a density of (.05 gpm/sq.ft.)**
- Water supply duration of 30 minutes

☐ Yes ☐ No **Outside Dwelling Unit**

- Per NFPA 13 criteria (*QR & QR Extended Coverage Sprinklers Allowed*)

- **Exceptions:**

Compartmented areas less than 500 square feet (*with all of the following*):

- o 30-minute fire rated construction
- o Protected with standard or QR sprinklers not exceeding 130 square feet/sprinkler, and
- o Openings from the compartment protected **or** (less than 50 square feet with "lintel" at least 8 inches)

Discharge Density for hazard per NFPA 13

**SPRINKLER COMPONENTS: Is the following information provided on plans/specifications?**

☐ Yes ☐ No Complete catalog cut sheets for all equipment and materials used.

☐ Yes ☐ No Hydraulic data nameplate (for hydraulically designed systems).

☐ Yes ☐ No Hydraulic reference points shown on the plan that correspond with comparable reference points on the hydraulic calculation sheets.

☐ Yes ☐ No The most demanding area is **highlighted on plans** and provided in hydraulic calculations.

☐ Yes ☐ No Pipe sizes and lengths shown on the plan correspond with the sizes and lengths shown on the hydraulic calculation sheets.

☐ Yes ☐ No Relative elevations of sprinklers, junction points, and supply or reference points.

☐ Yes ☐ No Proved details and section view outlining all ceiling information on plans.

(*Including Ceiling Height, Soffits, Obstructions, etc.*)?

☐ Yes ☐ No Pressure loss for backflow preventer and/or meter included in hydraulic calculations.

☐ Yes ☐ No Hanger types and locations show on plans.

☐ Yes ☐ No ☐ N/A A 2 ½ standpipe hose outlet at the highest landing of the stairways with access to the roof and on the roof where stairways do not access the roof with an additional 2 ½ hose connection. (if applicable)

☐ Yes ☐ No ☐ N/A Floor control valves at each floor in multi-story buildings. (if applicable)

☐ Yes ☐ No ☐ N/A Approximate capacity (in gallons) of each dry pipe system. (if applicable)

☐ Yes ☐ No A General Information Sign to be provided on a System Riser per *Section NFPA 13(2010):24.6*.

**FIRE PUMP INFORMATION (if applicable)**

**If Fire Pump Information is not applicable, skip this section and go to the DESIGN SPECIFICATION Section below.**

Manufacturer: Type: ☐ Diesel ☐ Electric

Rated PSI: Rated GPM:

Rated HP: Controller Type:

**Dedicated Electrical Service Provided?** ☐ Yes ☐ No ☐ Unknown

Provides a standby or emergency power supply to the fire pump with an automatic power transfer switch controller? ☐ Yes ☐ No

**Provides details and catalog cut sheets on the fire pump controller?** ☐ Yes ☐ No

**Fire Pump Booster pump** connection provided with pressure device or switch to control operation when pressure to pump suction drops per IAC 327; IAC 8-10-3? ☐ Yes ☐ No ☐ Unknown

**Fire Pump Booster pump** provided with audible or visual alarm to provide warning when flow occurs per IAC 327; IAC 8-10-3? ☐ Yes ☐ No ☐ Unknown

**Fire Pump Booster pump** provided with a control valve on the booster pump discharge to automatically throttle the flow as necessary to maintain a minimum of (10) pounds per square inch per IAC 327; IAC 8-10-3? ☐ Yes ☐ No ☐ Unknown

**Fire Pump Room fire-resistive-rated to 2 hours? (or 1 hour with sprinklers) per NFPA 20** ☐ Yes ☐ No ☐ Unknown

**Designer or Owner:**

☐ I certify that the information provided in this document is true and accurate.

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(Printed Name)

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(Signature)

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(Date)

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(Company Name)

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(Email and Phone Contact)