



CHICAGO CODE CLARIFICATIONS

Title 14B, Section 903.3.1.1 – NFPA 13 Sprinkler Systems

Where NFPA 13 sprinkler systems are required per Title 14B, Section 903.3.1.1, the following clarifications apply:

A. Location of sprinklers:

- a. Extended coverage horizontal sidewall sprinklers may be installed in light hazard occupancies with smooth ceiling construction to protect areas consistent with their listing. Any other use of extended coverage sprinklers is not permitted.
- b. Stairwells shall have the main landings protected with sprinklers. Intermediate landings must be protected with sprinklers only when the sprinkler at the main landing does not provide the proper coverage.
 - a. The sprinkler at the main landing must be able to cover the cross-sectional area of the stairwell at the location it is installed.
 - b. If this is not the case, then the intermediate landings must have sprinklers as well.
- c. Sprinklers are required in all closets unless a specific exception is listed in NFPA 13.
- d. Sprinklers are not required in residential bathrooms under 55 square feet if the requirements for the omission in NFPA 13 are met.

B. Hydraulic Calculations:

- a. The design densities and area shall not be less than the following:

Occupancy	Density	Area
Class R and I	0.10 GPM square feet	1,500 square feet
Class A, B, and E	0.12	1,500 square feet
Class F, M, and S	0.20	2,000 square feet

- b. For Class F, M, and S occupancies, if NFPA 13 requires a higher density and area, the higher density and area shall be required.
- c. Area increases required by NFPA 13 shall be applied to the areas listed in the table above.
- d. In buildings with mixed occupancies, the design density and area of application for the different occupancies shall be applied to each occupancy.

- a. In buildings of Class A, B, E, R, and I occupancy class those areas used for storage or building maintenance shop purposes shall be sprinkled on the basis of an industrial occupancy.
 - b. Spaces used for heating, ventilation, and air conditioning equipment shall have a density of 0.15 GPM per square foot over the most remote 1,500 square feet.
 - e. A safety margin, not less than five pounds per square inch, shall be provided between the calculated pressure requirement of a system and the water pressure available in the city water main supplying a hydraulically calculated system.
 - a. The available city water pressure shall be determined by a water flow test or fire pump test near the site of the building conducted within the previous 12 months.
 - f. Reductions in the design area for the use of quick response sprinklers are not permitted.
 - g. The use of the Room Design Method is not permitted.
 - h. The design area for residential sprinklers shall be 1,500 square feet (four head calculation is not permitted).
- C. System Size Limitations (pre-action valve)
- a. The area protected by a single pre-action valve shall not exceed 5,000 square feet except that in storage occupancies which are operated continuously at a temperature less than 32°F, a single pre-action valve may be used to protect an area up to 40,000 square feet.
- D. Test Pipes
- a. An inspector's test connection shall be provided at the most remote branch line at the highest level of the system.
 - a. There shall be a separate test pipe for each system.
 - b. A test valve, which is not exposed to freezing, shall be provided to allow the use of the connection.
 - c. Inspector test connections in multistory buildings with drain risers can be located at the system control valve assembly.
- E. Check valves for Multi-story Buildings
- a. In contrast with NFPA 13, section 8.2.4, the use of the check valve shall not be permitted after leading off a riser in multistory buildings.
 - a. Control valve and drain assemblies are still required in such locations.
- F. The CFPB reserves the right to make any changes necessary to these requirements.