

WATER CURTAIN IN LIEU OF PROTECTED EXTERIOR OPENINGS

This Information Bulletin establishes minimum requirements to install a water curtain at exterior openings of a sprinklered building per Section 705.8.2 of the 2023 Los Angeles Building Code. A water curtain is defined as a line of closely spaced sprinklers (or a single sprinkler) in combination with draft stops that are intended to retard the passage of fire through an opening.

Water Curtain Installation

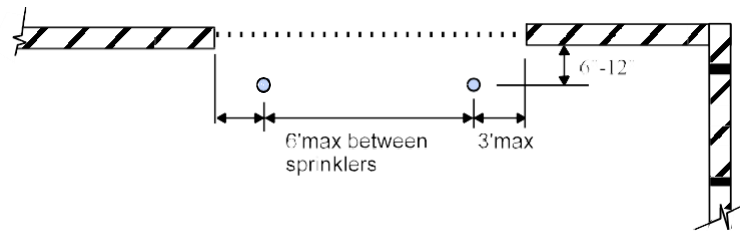
Draft Stops: The draft stop shall be located immediately adjacent to the opening, shall be at least eighteen (18) inches deep (measured from the sprinkler's deflector), and of noncombustible material or limited-combustible material that will stay in place before and during sprinkler operation. Glass is not an acceptable material for draft stops. Draft stop location, materials, and attachment to the structure shall be detailed on the approved plan in conjunction with the building permit.

Exception: A draft stop shall be permitted to be 16 inches in depth (measured from the sprinkler's deflector) only where structural conditions preclude the installation of 18" draft stops.

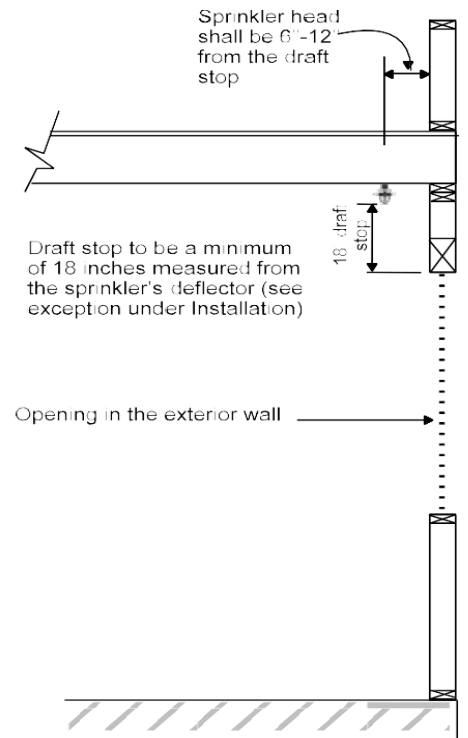
Fire Sprinkler Installation

Sprinkler Type: Sprinklers used for water curtain shall be standard or quick-response commercial type sprinklers except, in light hazard areas commercial quick-response type sprinklers shall be used. Also, in residential occupancies, commercial quick-response or residential- type sprinklers may be used.

Sprinkler Spacing: Sprinklers shall be spaced no more than 6-feet apart along the opening and 6" to 12" inches from the draft stop on the sprinkled side of the building. The distance between the edge of the opening and the nearest sprinkler head shall be a maximum of 3' feet as per Section 9.3.5.3.1 NFPA 13. Where



Water Curtain Protecting an Opening (Plan view)



Water Curtain Installation (Elevation View)

sprinklers are placed closer than 6' cross baffles shall be provided in accordance with Section 10.2.5.4.2 NFPA 13.

Hydraulic Calculations:

Water Curtains: Sprinklers in water curtains shall be hydraulically designed to provide three gpm per lineal foot of water curtain, with no sprinkler discharging less than 15 gpm. as required in Section 19.3.3.1 NFPA 13. The number of sprinklers calculated in the water curtain shall be the number in the length corresponding to the length parallel to the branch lines in the area determined by Section 28.2.4.2 NFPA-13.

If a single fire can be expected to operate sprinklers within the water curtain and within the design area of a hydraulically calculated system, the water supply to the water curtain shall be added to the water demand of the hydraulic calculations and shall be balanced to the calculated area demand by Section 19.3.3.3 NFPA-13. Hydraulic design calculations shall include a design area selected to include ceiling sprinklers adjacent to the water curtain Section 19.3.3.4 NFPA 13.

When the water curtain is located in an otherwise unsprinklered area, the design shall include all the sprinklers located in each fire separation area being protected i.e. the portion bounded by fire area separation or occupancy separation walls.