

4.25 Car Stackers/Lift Systems (2019)

Reference: 2016 NFPA 13 Section 5.4.2, A5.4.2(9), & 11.1.2(1); 2019 San Francisco Fire Code, Sections 105.7.26, 903.3.1.1 & 903.3.5.

Purpose: Provide additional SFFD guidelines for sprinkler protection of car stackers not specifically addressed in 2016 NFPA 13.

The sprinkler design criteria for car stackers/lift systems must extend 15 feet into adjacent areas that do not contain car stackers/lift systems.

Parking garage areas containing Car Stackers / lift systems with a single lift platform shall be protected by an automatic wet-pipe sprinkler system designed to Extra Hazard (Group 2) for a maximum of two cars stacked vertically in the same location. In addition, non-extended coverage standard-response sidewall sprinklers listed for Ordinary Hazard shall be acceptable for use under the lift platform. Each sidewall sprinkler shall cover an area of 80 square feet or less. The hydraulic calculation design criteria shall include all ceiling-level sprinklers within a minimum 2,500 sf area of sprinkler operation, or the maximum area containing car stackers/lift systems extending 15 feet into adjacent areas that do not contain car stackers/lift systems. Sidewall sprinklers under the lift platforms are not required to be included in the area of sprinkler operation.

For low-rise building, if the city main cannot provide the required flow at a residual pressure of 20 psi, a primary water supply tank and fire pump must be provided. The capacity of the tank shall meet the above requirements and the requirements in the currently adopted editions of NFPA 13 and 14.

Parking garage areas containing Car Stackers / lift systems with 2 or more lift platforms shall be protected by an automatic wet-pipe sprinkler system designed to Extra Hazard (Group 2). In addition, non-extended coverage standard-response sidewall sprinklers, listed for Ordinary Hazard, shall be acceptable for use to cover under each parking platform, including the bottom level, if the stacker is provided with a pit. The hydraulic calculation design criteria shall include all ceiling-level sprinklers within a minimum 2,500 square feet area of sprinkler operation, or the maximum area containing car stackers/lift systems extending 15 feet into adjacent areas that do not contain car stackers/lift systems. In addition a total of six (6) sidewall sprinklers under lift platforms shall be included in the area of sprinkler operation. The design density for the sidewall sprinklers shall be Ordinary Hazard Group 2. The sidewall sprinkler flow shall be from two (2) sidewall sprinklers covering under the top level parking platform at three (3) adjacent stalls or areas with car stacker/lift platforms.

Parking drive aisles or other areas with loft or column-less car stacking / lift platforms shall follow all of the criteria outlined in this administrative bulletin.