



## Design Guidelines

### Sprinkler Coverage for Car Stacking / Lift Systems

In building parking garages or other areas containing car stackers/lift systems the car stackers/lift systems shall be protected by an automatic sprinkler system designed to Extra Hazard Group 1 at the ceiling. In addition, standard or extended coverage sidewall sprinklers listed for Ordinary Group Hazard 2 shall be provided under each parking level, including the bottom level if the stacker/lift system is provided with a pit.

For dry pipe systems, the area shall be increased by 30 percent per NFPA 13 (2010) 11.2.3.2.5. The design requirements for the Extra Hazard Group 1 shall be a design density of 0.30 over 2,500 square feet, unless the area of the car stacking/lift system is less. If high-temperature sprinklers are used for extra hazard occupancies, the area of sprinkler operation shall be permitted to be reduced by 25 percent without revising the density, but not less than 2,000 square feet per NFPA (2010) 11.2.3.2.6.

The number of heads to calculate is to be the most demanding of either the ceiling or any of the lower car stacker levels.

The 15 foot requirement in the NFPA 13 (2010 ed. 11.2.1) to extend the more demanding design area into the lesser area is not required.

#### **Note:**

For a high-rise building, car stacker sprinkler systems may cause the secondary water supply capacity to increase. For car stackers/lift systems no more than 2 levels high, water supply and secondary water supply capacity for the system is to be considered as an Ordinary Hazard Group 2 System. The secondary water supply shall be designed for largest car stacking sprinkler system demand plus a hose allowance of 100 gpm for 60 minutes.