903.2.1.6

Assembly Occupancies on Roofs

CHANGE TYPE: Addition

CHANGE SUMMARY: Fire sprinklers are now required on all floors between the occupied roof and the level of exit discharge when assembly uses occur on the rooftop of buildings and the occupant load exceeds 100 for Group A-2 or 300 for other Group A occupancies.

2015 CODE: **903.2.1.6 Assembly Occupancies on Roofs.** Where an occupied roof has an assembly occupancy with an occupant load exceeding 100 for Group A-2, and 300 for other Group A occupancies, all floors between the occupied roof and the *level of exit discharge* shall be equipped with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

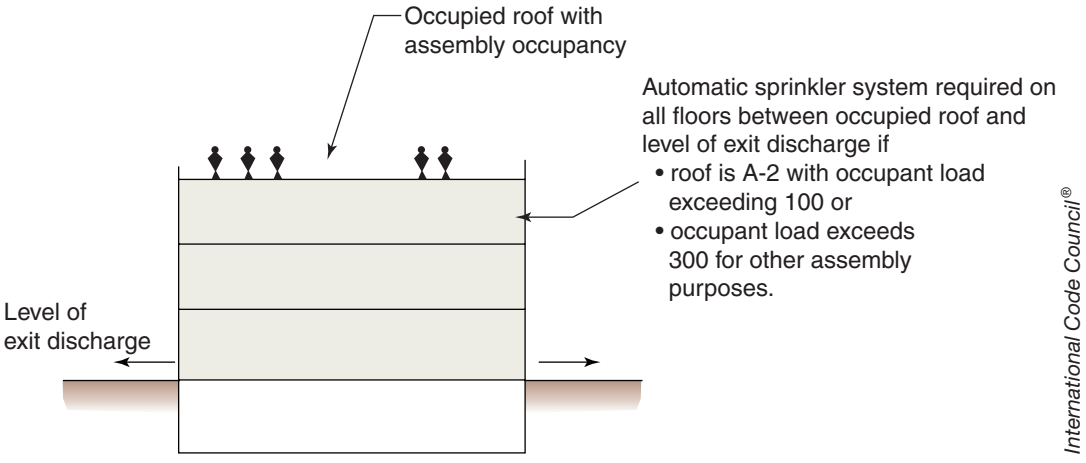
Exception: Open parking garages of Type I or Type II construction.

CHANGE SIGNIFICANCE: Currently the code states that if a building has a fire area containing a Group A-1, A-2, A-3 or A-4 assembly on a floor other than the level of exit discharge, then the entire story and all stories to the level of exit discharge must be protected with a fire sprinkler system.

Frequently, building owners will provide an open-air roof-top bar, lounge or other assembly-type use on the rooftop of a building. Since the rooftop of the building does not fit into the definition of a fire area, fire sprinklers are not provided. If that same use were inside the building, it would be protected with fire sprinklers along with all of the floor levels down to the levels of exit discharge.

In order to provide a reasonable level of safety for the occupants on the roof, fire sprinklers are now required in the floor levels below the roof when the occupant loads exceed the normal threshold for fire sprinklers according to each particular occupancy. The fire sprinkler threshold for Group A-2 is an occupant load of 100; the threshold for Groups A-1, A-3 and A-4 is 300. The same thresholds are applied when the use is on the roof.

903.2.1.6 continues



Assembly use on the roof protected by sprinklers on the stories beneath down to the level of exit discharge

903.2.1.6 continued

The rooftop itself is not required to be protected with a fire sprinkler system, but a fire sprinkler system is required on all stories down to the levels of exit discharge. The fire sprinkler system could be designed to either Section 903.3.1.1 or 903.3.1.2. This reference to Section 903.3.1.2 is included since the assembly use could occur on the rooftop of a residential building.

Open parking garages constructed of Type I or II construction are exempted from the fire sprinkler requirement. There is considerable data supporting the elimination of fire sprinklers in open parking garages. For example, two reports that evaluated fire behavior in parking garages are

1. 2006 NFPA Fire Data Report, "Structure and Vehicle Fires in General Vehicle Parking Garages" and
2. 2008 Parking Consultants Council Fire Safety Committee Report, "Parking Structure Fire Facts."

These reports provide the following conclusions:

- There is an average of only 660 fires per year in all types of parking garages in the U.S. This represents a mere 0.006 percent of all fires annually.
- There were no fire fatalities in open parking garages constructed of Construction Type I or II and an average of only 2 injuries per year.
- There was no structural damage in 98.7 percent of the fires in parking garages.
- Vehicle fires in parking garages typically do not spread from vehicle to vehicle. Fire spread from vehicle to vehicle occurred in only 7 percent of the incidents.

Fire sprinklers are required in occupancies other than open parking garages to protect the assembly occupancy above the fire and to protect the means of egress. Based on the inherent fire safety provided by open parking garages of Type I or II construction, a fire sprinkler system is not required when an assembly use is located on the roof.