607.6

Protection of Fire Service Access Elevators and Occupant Evacuation Elevators

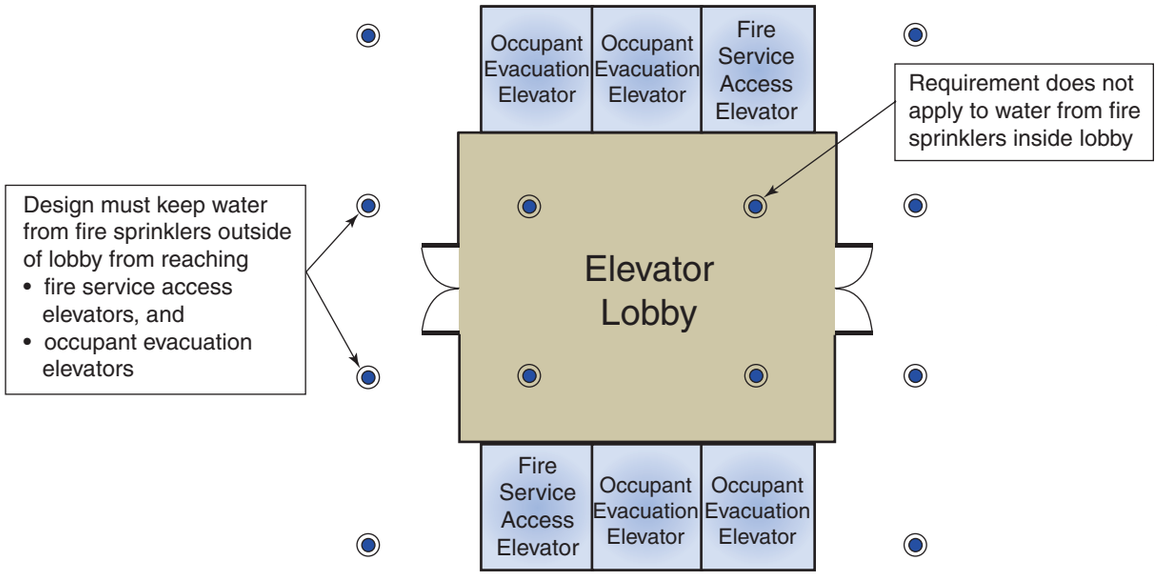
CHANGE TYPE: Addition

CHANGE SUMMARY: This is a new requirement to ensure that devices designed to prevent water from infiltrating into fire service access elevator hoistways and occupant evacuation elevator hoistways are properly maintained.

2015 CODE: **607.6 Water Protection of Hoistway Enclosures.** Methods to prevent water from infiltrating into a hoistway enclosure required by Section 3007.4 and Section 3008.4 of the *International Building Code* shall be maintained.

CHANGE SIGNIFICANCE: The *International Building Code* requires a method to prevent sprinkler water from penetrating a hoistway enclosure for both fire service access elevators (IBC Section 3007.4) and occupant evacuation elevators (IBC Section 3008.4). Table 607.6-1 compares the various features between occupant evacuation elevators and fire service access elevators.

The requirement for preventing water infiltration first appeared in the 2009 IBC for occupant evacuation elevators. The concern is to protect the reliability of the elevator operation and keep water out of the hoistway. The shunt-trip devices required by IBC Section 3005.5 are not installed in these particular elevators, so preventing water from affecting the braking system is critical. In the 2012 IBC, the same requirement was applied to fire service access elevators.



Water from operating fire sprinklers located outside elevator lobbies must be prevented from infiltrating into hoistways for fire service access elevators and occupant evacuation elevators.

TABLE 607.6-1 Features of Occupant Evacuation Elevators and Fire Service Access Elevators

OCCUPANT EVACUATION ELEVATORS	FIRE SERVICE ACCESS ELEVATORS
Design option for buildings taller than 420 feet in lieu of additional stairway	Minimum of two elevator cars required when an occupied floor in the building exceeds 120 feet above lowest level of fire department vehicle access
Designed for self-evacuation and egress of occupants who are not capable of traveling the stairs in high-rise buildings	Designed for use during fire service operations
Phase I and II fire operations	Phase I and II fire operations
Fire sprinklers are prohibited in the elevator shaft and the elevator machine rooms	Fire sprinklers are prohibited in the elevator shaft and the elevator machine rooms
Shunt trip for elevator shutdown is prohibited	Shunt trip for elevator shutdown is prohibited
Elevator lobby with a minimum of 1-hour construction	Elevator lobby with a minimum of 1-hour construction
Lobby doors, other than the elevator car doors, must have a minimum of ¾-hour fire-protection rating with a vision panel	Lobby doors, other than the elevator car doors, must have a minimum of ¾-hour fire-protection rating
Lobby size must provide a minimum of 3 square feet/person based on 25% of the occupant load of the story, PLUS 1 wheelchair space (30″ × 48″) for each 50 persons based on the occupant load of the story	Lobby size must be a minimum of 150 square feet with a minimum dimension of 8 feet
Two-way communication from the elevator lobby to the fire command center	Not required
Elevator operation monitored at the fire command center	Elevator operation monitored at the fire command center
Interior exit stairway directly accessible from elevator lobby	Interior exit stairway directly accessible from elevator lobby
Building must be equipped with an emergency voice/alarm communication system	Not required
Standby power required for elevator equipment and HVAC in elevator machine room	Standby power required for elevator equipment, HVAC in elevator machine room and hoistway lighting
Method to prevent water discharged from fire sprinklers located outside the lobby from infiltrating the hoistway	Method to prevent water discharged from fire sprinklers located outside the lobby from infiltrating the hoistway

It is important to stress three items:

1. The requirement for preventing water from entering the hoistway does not apply to all elevators. It is only applicable to fire service access elevators and occupant evacuation elevators.
2. The source of water that must be addressed is from the fire sprinkler system and not from firefighter hoses.
3. The water of concern is limited to sprinkler activations outside the lobby.

The actual method of preventing water from entering the hoistway is not specified; it is a performance-based requirement. Prevention could be accomplished by trench drains in the floor, a slight slope in the floor as it approaches the hoistway, curbs, or gasketed openings.

Whichever method is selected, the dependability of the system to not allow water into the hoistway must be maintained. If a drain system is installed, drains can become clogged by dirt and debris; if gaskets are used, they can wear and deteriorate. It is important that the integrity of these systems be maintained so that the elevators remain safe during their use in a fire.