**Policy 408 – Fire Service Access Elevator**

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<th>SUBJECT:</th>
<th>EFFECTIVE DATE:</th>
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<td>Fire Service Access Elevator</td>
<td>April, 2019</td>
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<td>March, 2020</td>
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<th>NOTICE:</th>
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<td>Policies are established by the Phoenix Fire Prevention Code, Section 104.1</td>
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<th>APPROVED:</th>
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<td>John Mertens, Fire Marshal</td>
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**Policy:**
Fire service access elevator (fire service access elevator) are designed with strict and rigorous standards to provide a reasonable degree of safety for fire fighters operating the fire service access elevator to a location for staging firefighters and equipment in the event of an emergency. The requirements for fire service access elevator were developed by the U.S. General Services Administration (GSA) and the National Institute of Standards and Technology (NIST).

The purpose of this policy is to provide a guideline to the design team, installing contractors and building owners to provide the safeguards and fire safety features in high-rise buildings with occupied floor more than 120 feet such that the Fire Department has a more efficient and safe means for fighting fires and rescue occupants in high-rise buildings.

**Application:**
This policy applies to all new high-rise buildings with occupied floor more than 120 feet above the lowest level of fire department vehicle access.

2012 International Building Code (IBC) Section 403.6.1 of the requires that at least two fire service access elevator shall be provided in such buildings.
Code Requirements:
Every floor of the buildings shall be served by fire service access elevator and comply with IBC Sections 3007.1 through 3007.10.

Fire Service Access Elevator Cab Dimensions and Capacity: Each fire service access elevator shall have a capacity not less than 3,500 lbs. The cab shall be provided with a minimum clear distance between walls and door excluding return panels not less than 80 inches by 54 inches and a minimum distance from wall to return panel not less than 51 inches with a 42 inch side slide door.

3007.2 Phase I Emergency Recall Operation: Actuation of any building fire alarm-initiating device shall initiate Phase I emergency recall operation on all fire service access elevators in accordance with the requirements in ASME A17.1/CSA B44. All other elevators shall remain in normal service unless Phase I emergency recall operation is manually initiated by a separate, required three-position, key operated “Fire Recall” switch or automatically initiated by the associated elevator lobby, hoistway or elevator machine room smoke detectors. In addition, if the building also contains occupant evacuation elevators in accordance with Section 3008, an independent, three-position key-operated “Fire Recall” switch conforming to the applicable requirements in ASME A17.1/CSA B44 shall be provided at the designated level for each fire service access elevator.

3007.3 Automatic Sprinkler System: The building shall be protected throughout with an automatic sprinkler system in accordance with IBC Section 903.3.1.1, except as otherwise permit by IBC Section 903.3.1.1.1 and as prohibited by Section 3007.3.1

3007.3.1 Prohibited locations. Automatic sprinklers shall not be installed in elevator machine rooms, elevator machine spaces and elevator hoistways of fire service access elevators.

3007.3.2 Sprinkler system monitoring. The sprinkler system shall have a sprinkler control valve supervisory with and water flow-initiating device provided for each floor that is monitored by the buildings fire alarm system.

3007.4 Water Protection. An approved method to prevent water from infiltrating into the hoistway enclosure from the operation of automatic sprinkler system outside the enclosed fire service access elevator lobby shall be provided.

3007.5 Shunt Trip. Means for elevator shutdown in accordance with IBC Section 3006.5 shall not be installed on elevator systems used for fire service access elevators.
3007.6 Hoistway Enclosures. The fire service access elevator hoistway shall be in a **shaft enclosure** complying with IBC Section 708.

3007.6.1 Structural integrity of hoistway enclosures. The fire service access elevator hoistway enclosure shall comply with IBC Sections 403.2.3.1 through 403.2.3.4.

3007.6.2 Hoistway lighting: When firefighters’ emergency operation is active, the entire height of the hoistway shall be illuminated at not less than 1 footcandle (11 lux) as measured from the top of the car of each fire service access elevator.

3007.7 Fire service access elevator lobby. The fire service access elevator shall open into fire service access elevator lobby in accordance with IBC Sections 3007.7.1 through 3007.7.5

   **Exception:** Where a fire service access elevator has two entrances onto a floor, the second entrance shall be permitted to open into an elevator lobby in accordance with IBC Section 713.14.1.

3007.7.1 Access. The fire service access elevator lobby shall have direct access to an enclosure for an interior exit stairway.

3007.7.2 Lobby enclosure. The fire service access elevator lobby shall be enclosed with a **smoke barrier** having a fire-resistance rating of not less than 1 hour, except that lobby doorways shall comply with IBC Section 3007.7.3

   **Exception:** Enclosed fire service access elevator lobbies are not required at the levels of exit discharge.

3007.7.3 Lobby doorways: Other than the door to the hoistway, each doorway to a fire service access elevator lobby shall be provided with a ¾-hour **fire door assembly** complying with IBC Section 716.5. The **fire door assembly** shall also comply with the smoke a daft control door assembly requirements of IBC Section 716.5.3.1 with the UL 1784 test conducted without the artificial bottom seal.

3007.7.4 Lobby size. Each enclosed fire service access elevator Lobby shall not less than 150 square feet (14 M²) in area with a minimum dimension of 8 feet (2440 mm).

3007.7.5 Fire service access elevator symbol. A pictorial symbol of a standardized design designating which elevators are fire service access elevators shall be installed on each side of the hoistway door frame on the portion of the frame at right angles to the fire service access elevator lobby. The fire service access elevator symbol shall be designed as shown in IBC Figure 3007.7.5 and shall comply with the following:
1. The fire service access elevator symbol shall be not less than 3 inches (76 mm) in height.
2. The vertical center line of the fire service access elevator symbol shall be centered on the hoistway door frame. Each symbol shall not be less than 78 inches (1981 mm), and and not more than 84 (2134 mm) inches above the finished floor at the threshold.

3007.8 Elevator system monitoring. The fire service access elevator shall be continuously monitored at the fire command center by a standard emergency service interface system in accordance with NFPA 72.

The conditions monitored and displayed shall include, but are not limited to, the following:
Temperature Monitoring:
The continuous monitoring of smoke and temperature is to allow the responding firefighters to know when the tenability conditions at the floor elevator lobbies are changing. This shall be accomplished at a minimum by monitoring elevator lobbies, machine rooms, control rooms, machinery spaces, or control spaces smoke detector(s) for the presence of smoke and a minimum of three ranges of temperature in the elevator lobbies, machine rooms, machinery spaces, or control rooms that provide full bodily access for firefighters, as follows:

1. (1) Normal ≤90°F (32°C)
2. (2) Monitoring (supervisory) between 90°F (32°C) and 135°F (57°C)
3. (3) Unsafe (alarm) above 135°F (57°C)

Exception: Temperature monitoring is not required in areas or locations not accessible to firefighters, such as elevator control spaces and elevator machinery spaces located inside the elevator hoistway.

Video Monitoring:
The continuous monitoring of fire service access elevator is to allow the responding firefighters to know whether the elevator is occupied and manage the occupants rescue, deploy equipment and staging firefighters in the event of emergency.

This shall be accomplished at a minimum by providing a closed-circuit television (cctv) in the fire service access elevator to transmit a signal to the fire command center continuously. the image shall be colored and show clearly the entire fire service access elevator floor.

Elevator Controlling:
The continuous controlling of fire service access elevator is to allow the responding firefighters to operate the elevators from the fire command center and manage the occupants rescue and staging the firefighters more efficiently.
This shall be accomplished by elevator management system interconnection to the fire command center elevator control system. The location of elevator in hoistway and direction of elevator travel shall be displayed on the elevator control panel.

**Status Panel:**
The continuous display of temperature monitoring, indication of smoke in the lobby, water flow and smoke detection in every level, heat/smoke detection in elevator shafts and exit stair is allow the responding fire fighters to manage and operate the occupants rescue and staging the fire fighters more efficiently and quickly.

Status indicators shall be provided for all levels that served by fire service access elevator and by pilot-lamp type indicators as follows:

**Temperature Monitoring:**
1. Normal ≤90°F (32°C)---- GREEN
2. Monitoring (supervisory) between 90°F (32°C) and 135°F (57°C)---- AMBER/YELLOW
3. Alarm messaging for unsafe---- RED

**Indication of Smoke:**
1. No indication for normal
2. Alarm messaging or unsafe---- RED

**Indication of Water Flow:**
1. No indication for normal
2. Alarm messaging or unsafe---- RED

ON-AUTO-OFF control over the hoistway lights shall be provided on the panel.

**3007.9 Electrical Power:** The following features serving each fire service access elevator shall be supplied by both normal power and Type 60/Class 2/Level 1 standby power.
   1. Elevator equipment
   2. Elevator hoistway lighting
   3. Elevator machine room ventilation and cooling equipment
   4. Elevator controller cooling equipment

**3007.9.1 Protection of wiring and cables.** Wires and cables outside the elevator hoistway and machine room that provide normal and standby power, control signals, communication with the car, lighting, heating, air conditioning, ventilation and fire-detecting systems to fire service access elevator shall be protected by construction having a fire-resistance rating of not less
than 2 hours, or shall be circuit integrity cable having a fire-resistance rating of not less than 2 hours.

Exception: Wiring and cables to control signals are not required to be protected provide that wiring and cables do not serve Phase II emergency in-car operations

3007.10 Standpipe hose connection. A Class I standpipe hose connection in accordance with IBC Section 905 shall be provided in the interior exit stairway and ramp having direct access from the fire service access elevator lobby.

3007.10.1 Access. The exit enclosure containing the standpipe shall have access to the floor without passing through the fire service access elevator lobby.
**Code Requirements:**
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