5.08 Fire Service Access Elevators
Reference: 2010 SFFC, Section 511.1

1. **Purpose.** The purpose of this bulletin is to provide for safeguards and fire safety features in high rise buildings such that the fire department has a more efficient means than stairs, and safer means than Phase II elevators, for reaching and fighting fires on upper floors.

2. **Scope.** This bulletin applies to all new high-rise buildings more than 200 feet in height as defined by the California Building Code. For those buildings covered by the scope of this document, fire service access elevators designed for firefighter use during fire emergencies are required to be provided in accordance with paragraphs 2 through 6 of this bulletin.

   **Exception:** New buildings with multiple bank elevators that serve no more than 20 consecutive floors each, whereby firefighters may ascend the building in 20 floor intervals in separated hoistways.

   New buildings with an occupied floor level more than 120 feet above the level of fire department access shall comply with Section 3007 of the 2010 SFBC.

3. **Firefighter Elevators, Number and Capacity.** Where required, a minimum of one 4500 lb. capacity elevator or two 2500 lb. capacity elevators shall be provided for use as fire service access elevators but are not intended to be for exclusive use of the fire department. Each fire service access elevator shall serve every floor of the building, or shall be arranged so that every floor of the building may be reached by a series of simple transfers to adjacent banked elevators that are protected under these guidelines. In buildings provided with occupant evacuation elevators in accordance with Section 3008 of the SFBC, fire service elevators shall be separate and distinct from those elevators.

4. **Protection from fire, smoke and water.** Fire service access elevators shall be designed so that they are protected from the effects of fire, smoke, or water. This will be accomplished through an approved performance-based design. All features under this section shall have a minimum duration of six hours. The design may include, but is not limited to, the following:
   - Pressurization of the fire service access elevator shaft, its associated machine room, and associated enclosed lobbies as one zone. Normally, such zones are pressurized to 0.05 inches water column relative to adjacent zones such that smoke from a fire in an adjacent zone is restricted from flowing into the pressurized zone.
   - Sloping floors or floors of varying levels with strategically placed drainage. At a minimum, the drainage shall accommodate the calculated flow of the automatic fire sprinklers in the remote design area or 100 gpm, whichever is greater. This design shall not violate accessibility requirements in regard to level landing or threshold height requirements. The required drainage is not intended to accommodate water from sprinklers flowing within the elevator lobby.
   - Provisions for keeping elevator equipment at the appropriate temperature to sustain operation for the length of time the building generator is designed to operate (6 hours minimum, unless the fire pump is tied in to the load in which case the required run time is 8 hours). This may require a careful review of the equipment, its operating temperatures, the HVAC system and standby power systems.
   - A means for firefighters to monitor fire conditions in elevator lobbies and machine rooms, such as smoke detection and analog heat detection annunciated at the fire control room. This is intended to provide fire fighters with more information to determine whether fire service access elevator protection has been compromised.

5. **Prescriptive requirements.** The design shall include the following prescriptive requirements:
• Elevator hoistway, lobby, and machine room pressurization mechanical components used to protect the fire service access elevators shall be protected in accordance with smoke control system requirements as described in Section 909 of the California Building Code and shall be included in UUKL weekly self-testing of smoke control components. This system shall be illustrated and controllable at the firefighter's smoke control panel.

• Elevator lobbies and shafts serving fire service access elevators shall be 2 hour fire barrier construction. The fire service access elevator lobby shall have an access door directly into the pressurized stair enclosure. All doors that penetrate fire service access elevator lobbies shall be side-hinged. Other openings in the elevator lobby walls shall be limited to those necessary to serve or access the space.

• Each enclosed fire service access elevator lobby shall be a minimum of 150 square feet in area with a minimum dimension of 8 feet.

• Equipment located on the top of the elevator car and in the shaft shall be provided with sheet metal covers as added protection from the effects of water falling into the shaft. A permanent sign shall be posted on the fire service access elevator power panel in the elevator machine room that reads: “Sheetmetal covers on carton equipment shall be replaced after maintenance for firefighter safety”.

• The elevator and its installation shall conform to the currently adopted California Elevator Code (Title 8).

• Power transfer switches for fire service access elevators and their shaft pressurization fans shall be located as close as practicable to the motors and controls they supply. The normal power feeders and the stand-by feeders supplying the transfer switches shall be by independent routes, and shall comply with the San Francisco Electrical Code.

• The entire hoistway shall be illuminated at not less than 1 foot-candle (11 lux) as measured from the top of the car of each fire service access elevator when in Phase I and Phase II Operation. This lighting shall be provided with standby 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:
  ○ Elevator equipment (simultaneous use if two elevators are provided)
  ○ Elevator hoistway lighting
  ○ Elevator machine room ventilation and cooling equipment.
  ○ Elevator controller cooling equipment.

• Wires or cables 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 minimum 1-hour fire resistance rating or shall be circuit integrity cable having a minimum 1-hour fire-resistance rating.

• The fire service access elevator shall be continuously monitored at the fire command center by a standard emergency service interface system meeting the requirements of NFPA 72.
Where Machine Room-less (MRL) elevators are utilized, a smoke detector shall be installed at the top of the hoistway. The layout of the central control station shall be such that the fire alarm annunciator panel and the elevator panel may be monitored while talking on the handset of the two-way communication system. Exception: Where emergency responder radio communications systems are approved.

- The central control station shall be located in an approved location proximate to the fire service access elevators. The approved location must be close to an entryway where Fire Department vehicle access is provided. The preferred location is near the main entrance.
- Designated fire service access elevators shall be identified with the symbol for fire department access as defined by NFPA 170, Section 6.2.7 The symbol shall not be less than 3 inches in size, and shall be permanently attached to each side of the hoistway door frame on the portion of the frame at right angles to the elevator lobby. Each symbol shall be not less than 78 inches, and not more than 84 inches above the floor level at the threshold.
- Automatic fire sprinklers shall not be installed in elevator machine rooms, associated machinery spaces or the top of their associated hoistways. The storage of combustibles in elevator machine rooms is prohibited. The San Francisco Fire Department will consider the building to be equipped throughout with an automatic sprinkler system if all other areas are sprinklered in accordance with the NFPA 13 standard.

6. **Hoistway Venting.** Fire service access elevator hoistways that comply with this bulletin are not required to comply with the requirements of Section 3004 Hoistway Venting. Exception: For Machine Room-less (MRL) elevators where the elevator equipment is installed in the hoistway, a means for venting smoke and hot gases to the outer air in case of fire shall be provided.

7. **Submittal Requirements.** All designs shall be described in narrative form either in the smoke control report or in a separate report at the site permit stage of the project. Such reports shall include a description of the proposed strategy and will include justification for the performance criteria. The report shall be written by either a design professional or a fire protection engineer who is licensed in the State of California. This individual shall take responsibility for describing the safety features of the building that will protect the elevator under this requirement.