

APPENDIX K

MODIFIED INDUSTRY STANDARDS FOR ELEVATORS AND CONVEYING SYSTEMS

CHAPTER K1 MODIFICATIONS TO ASME A17.1 - 2000, SAFETY CODE FOR ELEVATORS AND ESCALATORS

K101.1 General. As referenced by Chapter 30 of the *New York City Building Code*, the provisions of ASME A17.1—00 with supplements A17.1a—02 and A17.1b—03 shall be modified in accordance with this chapter. The section numbers correlate to those in the referenced ASME standard. Refer to the rules of the department for any subsequent additions, modifications or deletions that may have been made to this standard in accordance with Section 28-103.19 of the *Administrative Code*.

PART 1 GENERAL

SECTION 1.3 DEFINITIONS

1.3 Add or revise the following definitions to Section 1.3 as follows:

Delete and revise the definition “Designated level” to read as follows:

DESIGNATED LEVEL. For the purpose of applying Section 2.27.3, designated level shall mean the street floor or other level that best serves the needs of emergency personnel for fire fighting or rescue purposes.

Add new definition “Elevator classification” to read as follows:

ELEVATOR CLASSIFICATION. Elevator is classified as freight or passenger.

Add new definition “Elevator, service car” to read as follows:

ELEVATOR, SERVICE CAR. A passenger or freight elevator, located in an interim multiple dwelling registered with the New York City Loft Board, in accordance with Article 7-C of the *Multiple Dwelling Law*.

Delete and revise the definition “Hospital emergency service” to read as follows:

HOSPITAL EMERGENCY SERVICE. A special operating control function that may be provided for elevators in Occupancy Group I-2 (Hospital) or other applicable medical facility used to transport a patient in a life or death situation.

Delete and revise the definition “Installation placed out of service” to read as follows:

INSTALLATION PLACED OUT OF SERVICE (DISMANTLED). An installation whose power feed lines have been disconnected from the main line disconnect switch; and

- (a) An electric elevator, dumbwaiter, sidewalk elevator or material lift whose suspension ropes have been removed, whose car and counterweight rest at the bottom of the hoistway, and whose hoistway doors have been permanently barricaded or sealed in the closed position on the hoistway side;
- (b) A hydraulic elevator, dumbwaiter, sidewalk elevator or material lift whose car rests at the bottom of the hoistway; whose pressure piping has been disassembled and a removed from the premises; whose hoistway doors have been permanently barricaded or sealed in the closed position; and
- (c) An escalator or moving walk whose entrances have been permanently barricaded.

Add new definition “Patient elevator” to read as follows:

PATIENT ELEVATOR. An elevator located in a building classified in Occupancy Group I-2 (Hospital) reserved for the “sole” use of vertical transportation of nonambulatory patients who are incapable of self-preservation because of age, physical or mental disability. Hospital staff or other passengers transporting a patient are permitted to ride with the patient. Such elevators must be operated by a designated attendant and shall meet the requirements of §2.27.4 and §2.27.5.3.

Add new definition “Sky lobby” to read as follows:

SKY LOBBY. The lowest landing of an elevator or a group of elevators located above the street level.

Add new definition “Smoke hole” to read as follows:

SMOKE HOLE. An opening for an elevator hoistway venting at the top of the elevator hoistway(s).

Add new definition “Zero clearance vestibule” to read as follows:

ZERO CLEARANCE VESTIBULE. A space on the elevator lobby between the exterior of the hoistway door and the security door attached to the elevator hoistway.

PART 2 ELECTRIC ELEVATORS

SECTION 2.1 CONSTRUCTION OF HOISTWAYS AND HOISTWAY ENCLOSURES

2.1.4 Control of smoke and hot gases.

Delete Section 2.1.4.

2.1.6 Projections, recesses and setbacks in hoistway enclosures.

Revise Section 2.1.6.2 to read as follows:

2.1.6.2 On sides not used for loading and unloading:

- (a) *Recesses*, except those necessary for installation of elevator equipment, shall not be permitted;
- (b) *Beams*, floor slabs, or other building construction making an angle less than 75 degrees with the horizontal shall not project more than [100 mm (4 in.)] 50 mm (2 in) inside the hoistway enclosure unless the top surface of the projection is beveled at an angle not less than 75 degrees with the horizontal;
- (c) *Separator* beams between adjacent elevators are not required to have bevels;
- (d) *Where setbacks* exceeding [100 mm (4 in.)] 50 mm (2 in) occur in the enclosure wall, the top of the setback shall be beveled at an angle of not less than 75 degrees with the horizontal;
- (e) *Bevels* are not required if the projections and setbacks are covered with material conforming to the following:
 - (i) *It* shall be equal to or stronger than 1.110 mm (0.0437 in.) wire;
 - (ii) *It* shall have openings not exceeding 25 mm (1 in.); and
 - (iii) *It* shall be supported and braced such that it will not deflect more than 25 mm (1 in.) when subjected to a force of 4.79 kPa (100 lbs per sq ft) applied horizontally at any point.

SECTION 2.2 PITS

2.2.2 Design and construction of pits.

Delete and revise Section 2.2.2.5 to read as follows:

2.2.2.5 Elevators with sprinklers in the shaftway shall be provided with a drain or sump pump.

2.2.4 Access to pits.

Revise Section 2.2.4.1 to read as follows:

2.2.4.1 Access shall be by means of the lowest hoistway door or by means of a separate pit access door located at the level of the pit floor.

Add new Subsection (f) to Section 2.2.4.4 to read as follows:

2.2.4.4 Separate pit door, when provided, shall be subject to the following requirements:

- (f) Pit doors shall be labeled "DANGER, ELEVATOR PIT" with letters not less than 51 mm (2 in) high.

SECTION 2.7 MACHINE ROOMS AND MACHINE SPACES

2.7.3.4 Access doors and openings.

Add new Subsection (e) to Section 2.7.3.4.1 to read as follows:

2.7.3.4.1 Access doors to machine rooms and overhead machinery spaces shall:

- (e) Be labeled "ELEVATOR MACHINE ROOM," with letters not less than 51 mm (2 in) high.

2.7.5 Lighting, temperature, and humidity in machine rooms and machinery spaces.

Add new Section 2.7.5.3 to read as follows:

2.7.5.3 A duplex receptacle rated at not less than 20A, 120V with ground fault circuit interrupter shall be provided in each machine room and machinery space. The receptacle shall not be used for permanently installed equipment.

2.7.8 Remote machine and control rooms.

Delete and revise Section 2.7.8.4 to read as follows:

2.7.8.4 A permanent two-way voice communication shall be provided between the lobby fire command station (where required or provided), the elevator car and elevator machine room, and/or control room.

SECTION 2.8 EQUIPMENT IN HOISTWAYS AND MACHINE ROOMS

2.8.1 Electrical equipment and wiring.

Revise Section 2.8.1.2 to read as follows:

2.8.1.2 Only such electrical wiring, raceways, and cables used directly in connection with the elevator, including wiring for signals, for communication with the car, fire department communications equipment, for lighting, heating, air conditioning, and ventilating the car, for fire detecting systems, for pit sump pumps, and for heating and lighting the hoistway and/or machine room and equipment allowed in §2.14.1.9.1(d) shall be permitted to be installed inside the hoistway.

2.8.2 Pipes, ducts, tanks, and sprinklers.

Delete and revise Section 2.8.2.3 to read as follows:

2.8.2.3 Sprinkler systems are not permitted in control/machine rooms.

SECTION 2.11 PROTECTION OF HOISTWAY OPENINGS

2.11.1 Entrances and emergency doors required.

Revise Section 2.11.1.1 to read as follows:

2.11.1.1 Hoistway landing entrances. All elevator hoistway-landing openings shall be provided with entrances that shall guard the full height and width of the openings. Entrances shall be at least 2030 mm (80 in.) in height and [800 mm (31.5 in.)] 915mm (36 in.) in width.

Revise Subsection (a) of 2.11.1.2 to read as follows:

2.11.1.2 Emergency doors in blind hoistways. Where an elevator is installed in a single blind hoistway, there shall be installed in the blind portion of the hoistway an emergency door at every third floor, but not more than 11 m (36 ft) from sill to sill, conforming to the following:

- (a) The clear opening shall be at least [700 mm (28 in.)] 915mm (36 in.) wide and 2030 mm (80 in.) high.

2.11.2 Types of entrances.

Delete and revise Section 2.11.2 .1 to read as follows:

2.11.2.1 Passenger elevators. For passenger elevators, entrances shall be one of the following types:

- (a) Horizontally sliding;
- (b) Horizontally swinging, single-section;
- (c) Hand- or power-operated vertically sliding that slide up to open.

Delete and revise Section 2.11.2.2 to read as follows:

2.11.2.2 Freight elevators. For freight elevators, entrances shall be one of the following types:

- (a) Horizontally sliding;
- (b) Swinging, single-section;
- (c) Center-opening, two- horizontally swinging, subject to restrictions of Section 2.11.2.3;
- (d) Vertically sliding biparting counterbalanced (see Section 2.16.4); or
- (e) Vertically sliding counterweighted, single or multisection.

2.11.6 Opening of hoistway doors.

Revise Section 2.11.6.2 to read as follows:

2.11.6.2 Means shall not be provided for locking out the service doors at:

- (a) The top terminal landing;
- (b) The bottom terminal landing;
- (c) The designated sky lobby and sky lobby alternate [and alternate] landings for elevators equipped with Phase I Emergency Recall Operation, when Phase I is effective; [and]

(d) Any landing for elevators equipped with Phase II Emergency In-Car Operation when Phase II is effective [.];

(e) Consecutive vacant floors;

(f) Main lobby street floor.

Add new Section 2.11.6.5 to read as follows:

2.11.6.5 Elevator landings provided with a zero clearance vestibule [not to exceed 150 mm (6 in) from the elevator hoistway door] are permissible only when locking devices accessible from the car are installed exclusively on the door that separates the zero clearance vestibule from the occupied floor space.

2.11.7 Glass in hoistway doors.

Revise Sections 2.11.7.1, 2.11.7.1.1 and 2.11.7.1.2 to read as follows:

2.11.7.1 Vision panels. Manually operated or self-closing hoistway doors of the vertically or horizontally sliding type, for elevators with automatic or continuous-pressure operation, shall be provided with a vision panel. [Vision panels shall not be required at landings of automatic operation elevators where a hall position indicator is provided.] In multi doors, the vision panel is required in one only, but is permitted to be placed in all sections. All horizontally swinging elevator doors shall be provided with vision panels. Vision panels are permitted for any type of hoistway door. Vision panels shall not be required at the landing of automatic operation elevators equipped with horizontally side sliding car and hoistway doors.

Where required or used, vision panels shall conform to 2.11.7.1.1 through 2.11.7.1.7.

2.11.7.1.1 The area of any single vision panel shall not be less than [0.015 m² (24 in²)] 0.008 m² (12 in²), and the total area of one or more panels in any hoistway door shall not be more than [0.055 m² (85 in²)] 0.026 m² (40 in²).

2.11.7.1.2 Each clear panel opening shall reject a ball [150 mm (6in)] 102 mm (4 in.) in diameter.

2.11.11 Entrances, horizontal slide type.

Revise Subsection (a) of Section 2.11.11.6 to read as follows:

2.11.11.6 Bottom guides. Bottom guides shall conform to the following:

- (a) The bottom of each panel shall be guided by [one] two or more members.

2.11.15 Marking.

Add new text to Section 2.11.15.1 and revise to read as follows:

2.11.15.1 Labeling of tested assembly. In jurisdictions not enforcing the NBCC, 2.11.15.1.1 and 2.11.15.1.2 apply. Where required by this code, the entire entrance assembly shall be of an approved type.

**SECTION 2.12
HOISTWAY-DOOR LOCKING DEVICES AND
ELECTRIC CONTACTS, AND
HOISTWAY ACCESS SWITCHES**

Delete and revise the heading of Section 2.12 to read as follows:

**SECTION 2.12
HOISTWAY-DOOR LOCKING DEVICES AND
HOISTWAY ACCESS SWITCHES AND
ELEVATOR PARKING DEVICES**

2.12.3 Hoistway-door combination mechanical locks and electric contacts.

Delete Section 2.12.3 in its entirety.

Section 2.12.3 Reserved.

2.12.4 Listing/certification door locking devices and door or gate electric contacts.

Delete and revise Section 2.12.4.1 to read as follows:

2.12.4.1 Type tests. Each type and make of hoistway-door interlock, electric contact, and door or gate electric contact shall be of an approved type.

Delete and revise Subsection (b) of Section 2.12.4.3 to read as follows:

2.12.4.3 Identification marking.

- (b) The approved agency's name, date of approval and identifying number or symbol;

Add new Section 2.12.6.2.6 to read as follows:

2.12.6.2.6 Elevator parking device.

- (a) **Parking devices required.** Existing elevators that are operated from within the car only shall have elevator-parking devices installed at every landing that is equipped with an unlocking device. On elevators that are not operated from within the car only, an elevator parking device shall be provided at one landing and may be provided at other landings. This device shall be located at a height not greater than 2.11 m (6 ft 11 in) above the floor. Parking devices are not required for elevators having hoistway doors that are automatically unlocked when the car is within the landing zone.
- (b) **General design requirements.** Parking devices shall conform to the following requirements:
 - (1) They shall be mechanically or electrically operated.
 - (2) They shall be designed and installed so that friction or sticking or the breaking of any springs used in the device will not permit opening or unlocking a door when the car is outside the landing zone of that floor.

- (3) Springs, where used, shall be of the restrained compression type, to prevent separation of the parts in case the spring breaks.

Delete and revise Section 2.12.7.3.2 to read as follows:

2.12.7.3.2 The car cannot be operated at a speed greater than 0.35 m/s (75 ft/min).

Delete and revise Section 2.13.2.1.2 to read as follows:

2.13.2.1.2 Collapsible car gates shall not be power opened.

**SECTION 2.14
CAR ENCLOSURES, CAR DOORS AND GATES AND
CAR ILLUMINATION**

2.14.2 Passenger-car enclosures.

Revise Section 2.14.2.1.1 to read as follows:

2.14.2.1.1: Materials in their end use configuration, other than those covered by 2.14.2.1.2 through 2.14.2.1.6, shall conform to the following requirements, based on the tests conducted in accordance with the requirements of ASTM E 84, UL 723, or NFPA 255:

- (a) Flame spread rating of 0 to [75] 50.
- (b) Smoke development of 0 to [450] 100.

Delete and revise Subsection (a) of 2.14.2.5 to read as follows:

2.14.2.5 Vision panels. Vision panels are not required, but where used, shall:

- (a) Be of a total area of not more than 0.047 m² (72 in²), and contain no single glass panel having a width exceeding 101 mm (4 in.);

2.14.4 Passenger and freight car doors and gates, general requirements.

Revise Section 2.14.4.11 to read as follows:

2.14.4.11 Closed position of car doors or gates. Car doors or gates shall be considered to be in the closed position under the following conditions:

- (a) For horizontally sliding doors or gates, when the clear open space between the leading edge of the door or gate and the nearest face of the jamb does not exceed [50 mm (2 in.)] 25 mm (1 in.) except where car-doors are provided with a car door interlock(s), 10 mm (0.375 in.);
- (b) For vertically sliding counterweighted doors or gates, when the clear open space between the leading edge of the door or gate and the car platform sill does not exceed [50 mm (2 in.)] 25 mm (1 in.); and
- (c) For horizontally sliding center-opening doors, or vertically sliding biparting counterbalanced doors, when the door panels are within [50 mm (2 in.)] 25 mm (1 in.) of contact with each other, except where horizontally sliding center opening car doors are provided with a car door interlock(s), 10 mm (0.375 in.).

2.14.7 Illumination of car and lighting fixtures.

Revise Section 2.14.7.1.4 to read as follows:

2.14.7.1.4 Each elevator shall be provided with [an] a guarded electric light and convenience outlet fixture on the car top and under the car platform.

**SECTION 2.15
CAR FRAMES AND PLATFORMS**

2.15.8 Protection of platforms against fire.

Revise Section 2.15.8 to read as follows:

2.15.8 Protection of platforms against fire. All platform materials exposed to the hoistway shall be either:

- (a) Metal; or
- (b) Other materials that, in their end use configuration, conform to the following requirements, based on the tests conducted in accordance with the requirements of ASTM E 84, UL 723, NFPA 255, or CAN/ULC-S102.2, whichever is applicable (see Part 9):
 - (1) Flame spread rating of 0 to [75] 50; and
 - (2) Smoke development of 0 to [450] 100.

**SECTION 2.16
CAPACITY AND LOADING**

2.16.1 Minimum rated load for passenger elevators.

Add new Section 2.16.1.3.3 to read as follows:

2.16.1.3.3 Nonpermanent freight-handling equipment (Section 2.14.1.9.1) shall be removed when the elevator is used for passenger service.

**SECTION 2.20
SUSPENSION ROPES AND THEIR CONNECTIONS**

2.20.9 Suspension rope fastening.

Add new text to Section 2.20.9.5 to read as follows:

2.20.9.5 Wedge rope sockets. Wedge socket assemblies shall be of a design as shown in Fig. 2.20.9.5, and shall conform to 2.20.9.2 and 2.20.9.3, and 2.20.9.5.1 through 2.20.9.5.6. Wedge rope sockets are not permitted on counterweighted winding drum machines.

**SECTION 2.21
COUNTERWEIGHTS**

2.21.1 General requirements.

Revise Section 2.21.1.2 to read as follows:

2.21.1.2 Retention of weight sections. Means shall be provided to retain weights in place in the event of buffer

engagement or safety application or if they become broken. Where tie rods are used, a minimum of two shall be provided and they shall pass through all weight sections. Tie rods shall be provided with a lock nut and a cotter pin at each end.

- (a) Counterweight material shall be steel, iron or lead only and shall have a minimum melting temperature of 620 °F.

2.21.4 Compensation of means:

Revise Section 2.21.4 to read as follows:

2.21.4 Compensation means. Except for safety hooks, where used, compensation means, such as compensating ropes or chains or other mechanical means and their attachments used to tie the counterweight and car together, shall be capable of withstanding, with a factor of safety of 5, any forces to which the means is subjected with the elevator at rest. The maximum suspended weight of compensation means with car or counterweight at the top of its travel and one half-total weight of tension sheave assembly, where used, shall be included. The factor of safety for compensation means shall be based on the proof load, breaking strength, or test reports.

**SECTION 2.22
BUFFERS AND BUMPERS**

2.22.4 Oil buffers.

Add new Subsections (a) and (b) to Section 2.22.4. 6 as follows:

2.22.4.6 Means for determining oil level. Oil buffers shall be provided with means for determining that the oil level is within the maximum and minimum allowable limits. Glass sight gauges shall not be used.

- (a) A fixed inclined ladder shall be provided where the top of the buffer cylinder is over 1524 mm (5 ft.) in height above the pit floor.
- (b) A fixed vertical or inclined ladder fitted with an inspection and maintenance platform with guard rails shall be provided where the top of the car buffer cylinder is over 2134 mm (7 ft.) from the pit floor.

**SECTION 2.24
DRIVING MACHINES AND SHEAVES**

2.24.10 Means for inspection of gears.

Delete and revise Section 2.24.10 to read as follows:

2.24.10 Means for inspection of gears. Each gear case of geared machines shall have access to permit inspection of the contact surfaces of the gears.

SECTION 2.25 TERMINAL- STOPPING DEVICES

2.25.3 Final terminal-stopping devices.

Add new Subsection (d) to Section 2.25.3.1 to read as follows:

2.25.3.1 General requirements. Final terminal-stopping devices shall conform to 2.25.1 and the following:

- (d) Final limit switches and bracket shall be permanently secured and pinned.

SECTION 2.26 OPERATING DEVICES AND CONTROL EQUIPMENT

2.26.1.4 Inspection operation.

Add new Subsections 3 and 4 to Section 2.26.1.4.1(c) to read as follows:

2.26.1.4.1 General requirements.

- (c) Inspection operating devices shall:
 - (1) Be of the continuous-pressure type;
 - (2) Be labeled "UP" and "DOWN," respectively;
- (d) A separate device of the continuous-pressure type labeled "ENABLE" shall be provided adjacent to the inspection operating devices; and
- (e) The inspection operating devices shall become effective only when the "ENABLE" device is activated.

Delete and revise Section 2.26.1.4.2 to read as follows:

2.26.1.4.2 Top-of-car inspection operation. Top-of-car inspection operation shall conform to 2.26.1.4.1 and the following:

- (a) A stop switch (see §2.26.2.8) shall be permanently located on the car top and readily accessible to a person standing at the hoistway entrance normally used for access to the car top.
- (b) The transfer switch [see §2.26.1.4.1(b)] shall be located on the car top and shall be so designed as to prevent accidental transfer from the "INSPECTION" to "NORMAL" position.
- (c) The inspection operating devices [see §2.26.1.4.1(c)] shall be permitted to be of the portable type provided that:
 - (1) the "ENABLE" device [see §2.26.1.4.2(c)], and a stop switch, in addition to the stop switch required in §2.26.1.4.2(a) are included in the portable unit; and
 - (2) the flexible cord is permanently attached so that the portable unit cannot be detached from the car top.
- (d) Separate additional devices of the continuous-pressure type shall be permitted to be provided on the car top to make power door opening and closing and automatic car-leveling operative from the top of the car for testing purposes.

2.26.2 Electrical protective devices:

Delete and revise Section 2.26.2.5 to read as follows:

2.26.2.5 Emergency stop switch. On all elevators, an emergency stop switch shall be provided in the car, and located in or adjacent to each car operating panel. When open ("STOP" position), this switch shall cause the electric power to be removed from the elevator driving-machine motor and brake. Emergency stop switches shall:

- (a) Be of the manually opened and closed type;
- (b) Have red operating handles or buttons;
- (c) Be conspicuously and permanently marked "STOP," and shall indicate the "STOP" and "RUN" positions; and
- (d) While opened, cause the audible device to sound (see §2.27.1.1.1).

Delete Section 2.26.2.21 in its entirety:

Section 2.26.2.21 Reserved.

SECTION 2.27 EMERGENCY OPERATION AND SIGNALING DEVICES

2.27.1 Car Emergency signaling devices.

Add new text to Section 2.27.1.1.1 as follows:

2.27.1.1.1 A two-way communications means between the car and a location in the building that is readily accessible to authorized and emergency personnel shall be provided. Means shall be provided to enable two-way voice communication between the machine room and the interior of the car.

Delete and revise Section 2.27.2.4.3 to read as follows:

2.27.2.4.3 Means shall be provided adjacent to the selector switch (es) to indicate that the elevator is at the designated level with the doors in the normally open position.

2.27.3 Fire-fighters' emergency operation—automatic elevators.

Revise Sections 2.27.3.1.1, 2.27.3.1.2 and 2.27.3.1.3 to read as follows:

2.27.3.1.1 A [three] two-position key-operated switch shall be:

- (a) Provided [only] at the designated level for each single elevator or for each group of elevators;
- (b) Labeled "FIRE RECALL" and its positions marked ["RESET," "OFF," and "ON"] "NORMAL" and "FIREMAN SERVICE" (in that order) [, with the "OFF" position as the center position]. The "FIRE RECALL" letters shall be a minimum of 5 mm (0.25 in.) high in red or a color contrasting with a red background;
- (c) Located in the lobby within sight of the elevator or all elevators in that group and shall be readily accessible.

2.27.3.1.2 An additional key-operated “FIRE RECALL” switch, with two-positions, marked [“OFF” and “ON”] “NORMAL” and “FIREMAN SERVICE” (in that order), shall be permitted [only] at the building fire control station.

2.27.3.1.3 The switch(s) shall be rotated clockwise to go from [the “RESET” (designated level switch only), to “OFF” to “ON”] “NORMAL” to “FIREMAN SERVICE” positions. Keys shall be removable in the [“OFF” and “ON”] “NORMAL” and “FIREMAN SERVICE” positions.

Delete and revise Section 2.27.3.2 to read as follows:

2.27.3.2 Phase I fire alarm activation.

2.27.3.2.1 Smoke detectors. Except as set forth in subparagraph k of this paragraph, smoke detectors installed in accordance with subparagraphs a, b, c or d shall initiate Phase I emergency recall operation.

- (a) In buildings where a fire command station is not required or provided, a single smoke detector shall be installed in the ceiling of each elevator landing over the call button on each floor.
- (b) In buildings where a fire command station is required or provided, either of the following shall apply:
 - (1) An analog addressable smoke detector employing alarm verification shall be installed in the ceiling of each elevator landing over the call button on each floor, or
 - (2) Two (2) smoke detectors for cross zoning shall be installed in the ceiling of each elevator landing on each floor and spaced as follows:
 - (i) In an elevator landing containing one (1) or two (2) elevators, the distance between smoke detectors shall be the width of the hoistway(s) but not greater than ten (10) feet.
 - (ii) In an elevator landing containing three (3) or more elevators, the distance between smoke detectors shall be the distance between the centerlines of the end elevators but not greater than twenty (20) feet.
- (c) Associated Elevators:
 - (1) In associated elevator machine rooms of the buildings described in subparagraph (a) above, a smoke detector shall be installed.
 - (2) In associated elevator machine rooms of the buildings described in subparagraph (b) above, either of the following shall be installed:
 - (i) An analog addressable smoke detector employing alarm verification; or
 - (ii) At least two (2) smoke detectors for cross zoning spaced twenty (20) feet apart but not closer to the hoistway

enclosure walls one-fourth distance of the width of the machine room.

- (d) A smoke detector shall be installed at the top of the hoistway(s) in Occupancy Group R-2 where a fire alarm system is installed or required. Smoke detectors may be installed in any other hoistway and shall be installed in hoistways that are sprinklered.
- (e) Smoke detectors are not required in elevator landings at an unenclosed landing which is open to the outside air.
- (f) Smoke detector:
 - (1) In buildings described in subparagraph (a) above, where a single smoke detector is installed in the elevator landing, the activation of a smoke detector in any elevator landing, other than the sky lobby, shall cause all automatic elevators servicing the floor on which the sensing device is activated to return nonstop to the designated or sky lobby level, except as modified by the commissioner.
 - (2) In buildings described in subparagraph (b) above, where either an analog addressable smoke detector or two (2) smoke detectors for cross zoning are installed, the activation of either an analog addressable smoke detector or any one of the two smoke detectors for cross zoning in any elevator lobby shall annunciate at the fire command station only with floor identification. After verification of an alarm condition either from the analog addressable smoke detector or from the first detector of cross zoning detectors, the completion of the delayed time period of an analog addressable smoke detector or the activation of both smoke detectors for cross zoning in any elevator lobby, other than the sky lobby, shall cause all automatic elevators servicing the floor on which the sensing device is activated to return nonstop to the designated or sky lobby level, except as modified by the commissioner.
 - (3) In associated machine rooms described in Item 1 of subparagraph (c) above, the activation of the smoke detector in the elevator machine room shall cause all automatic elevators having any equipment located in that machine room, and any associated elevators of a group automatic operation, to return nonstop to the designated or sky lobby level, except as modified by the commissioner.
 - (4) In associated machine rooms described in Item 2 of subparagraph (c) above, where either an analog addressable smoke detector or two (2) smoke detectors for cross zoning are installed, the activation of either an analog addressable smoke detector or any one of the two smoke detectors for cross zoning in any elevator machine room shall annunciate at the fire command station only with floor identification.

cation. After verification of an alarm condition either from the analog addressable smoke detector or from the first detector of cross zoning detectors, the completion of the delayed time period of an analog addressable smoke detector or the activation of both smoke detectors for cross zoning in any elevator machine room shall cause all automatic elevators having any equipment located in that machine room, and any associated elevators of a group automatic operation, to return nonstop to the designated or sky lobby level, except as modified by the commissioner.

- (5) In addition to the activation of mechanical ventilation if provided {§2.1.4}, the activation of a smoke detector in any elevator hoistway shall cause all automatic elevators having any equipment located in the hoistway and any associated elevators of a group automatic operation, to return nonstop to the designated or sky lobby level.

The operation of this subparagraph shall conform to the requirements of §2.27.3.1.

- (g) When the lowest landing of elevators is above the designated level, such as the sky lobby level, the activation of smoke detectors in the sky lobby level or the activation of the waterflow alarm {§2.27.3.2.2} on the sky lobby floor shall cause such elevators to return nonstop to a floor two stories above the sky lobby level or, in the absence of a stop at that floor, to the nearest landing above the sky lobby level.
- (h) Elevators shall react only to the first smoke detector zone that is activated for that group.
- (i) Smoke detectors and/or smoke detector systems shall not be self-resetting.
- (j) Activation of smoke detectors to initiate elevator recall shall override any automatic programming for car stops but shall not affect the other elevator safety circuits.
- (k) The following buildings shall be exempt from the requirements of this section:
- (1) Buildings where the main use or dominant occupancy is classified in Occupancy Group R-2, except that they shall comply with the requirements of §2.27.3.2.1(d).
 - (2) Buildings where the main use or dominant occupancy is classified in Occupancy Group R-3.
 - (3) Existing buildings with occupied floors at or below 22 860 mm (75 ft) above the lowest Fire Department vehicle access level classified in Occupancy Group E that have at least one elevator available at all times for immediate use by the Fire Department and that are in compliance with the Fire Department's regu-

lations governing "life safety requirements for schools with students having physical disabilities."

- (4) Existing office buildings, one hundred feet or more in height and existing high-rise buildings as defined by the *New York City Building Code* equipped throughout with an automatic sprinkler system including a waterflow alarm.

2.27.3.2.2 Sprinkler waterflow alarm. In a building equipped throughout with an automatic sprinkler system, the activation of the waterflow alarm shall cause Phase I emergency recall operation to be initiated (§2.27.3.1).

Delete and revise Section 2.27.3.3 to read as follows:

2.27.3.3 Phase II emergency in-car operation. A three-position ("NORMAL," "HOLD," and "FIREMAN SERVICE" in that order) key-operated switch shall be provided in an operating panel in each car. The switch shall be rotated clockwise to go from the "NORMAL" to "HOLD" to "FIREMAN SERVICE" position. It shall become effective only when the designated or sky lobby level Phase I switch {§2.27.3.1} is in the "FIREMAN SERVICE" position or a smoke detector or water-flow alarm has been activated, and the car has returned to the designated or sky lobby level by Phase I operation. The key shall be removable in "NORMAL" or "HOLD" position. The "NORMAL," "HOLD," and "FIREMAN SERVICE" positions shall not change the operation until the car is at a landing with the doors in the normal open position.

2.27.3.3.1 When the Phase II switch is in the "FIREMAN SERVICE" position, the elevator shall be on Phase II operation, and the elevator shall operate as follows:

- (a) The elevator shall be operable only by a designated person in the car.
- (b) All corridor call buttons and directional lanterns shall remain inoperative. Car position indicators, where provided, shall remain in service. Hall position indicators, where provided, shall remain inoperative except at the designated level, sky lobby level and the fire control station, where they shall remain in service for Fire Department operations.
- (c) Only a continuous pressure door open button shall control the opening of power-operated doors. If the button is released prior to the door reaching the normal open position, the doors shall automatically close. §2.13.3.3, §2.13.4.2.1(b)(2), and §2.13.4.2.1(c) do not apply. On cars with two entrances, separate door-open buttons shall be provided for each entrance if both entrances can be opened at the same landing,
- (d) Open power-operated doors shall be closed only by momentary pressure on the door close button. On cars with two entrances, a separate door-close button shall be provided for each entrance if both entrances can be opened at the same landing.
- (e) Opening and closing of power operated car doors or gates that are opposite manual swing or manual slide

hoistway doors shall conform to the requirements of §2.27.3.3.1(c) and (d). Door opening and closing buttons shall be provided in the car-operating panel.

- (f) Door reopening devices rendered inoperative, per §2.27.3.1.6(e) shall remain inoperative. Full speed closing is permitted. Corridor door opening and closing buttons, if provided, shall be rendered inoperative.
- (g) Every car shall be provided with a button marked "CALL CANCEL" located in the same car operating panel as the Phase II switch, which shall be effective during Phase II operation. When activated, all registered calls shall be canceled and a traveling car shall stop at or before the next available landing.
- (h) Floor selection buttons shall be provided in the car to permit travel to all landings served by the car and they shall be operative at all times. Means that prevent the operation of the floor selection buttons or door operating buttons shall be rendered inoperative.
- (j) A traveling car shall stop at the next available landing for which a car call was registered. When a car stops at a landing, all registered car calls shall be cancelled.
- (k) The emergency stop switch shall remain operative.

2.27.3.3.2 When the Phase II switch is in the "HOLD" position, the elevator shall be on Phase II operation. The car shall remain at the landing with its doors open. The door close buttons shall be inoperative.

2.27.3.3.3 When the Phase II switch is in the "NORMAL" position, the elevator is not at the designated or sky lobby level and Phase I is in effect, the elevator shall operate as follows.

- (a) Automatic power-operated horizontally-sliding doors shall close automatically and the car shall revert to Phase I operation {§2.27.3.1} upon completion of door closing. All door reopening devices shall remain inoperative. Door open buttons shall remain operative. Full speed closing is permitted. If the Phase II switch is turned to the "FIREMAN SERVICE" or "HOLD" position prior to the completion of door closing, the doors shall reopen.
- (b) Elevators having power operated vertically sliding doors shall have corridor door open and close buttons rendered operative. All door reopening devices shall remain inoperative. Door closing shall be in accordance with the requirements of §2.27.3.3.1 (d) Full speed closing is permitted. If the Phase II switch is turned to the "FIREMAN SERVICE" or "HOLD" position prior to the completion of door closing, the doors shall reopen. The car shall revert to Phase I operation {§2.27.3.1} upon completion of door closing.
- (c) Elevators having manual doors shall revert to Phase I operation {§2.27.3.1} upon completion of door closing.

2.27.3.3.4 When the Phase II switch is in the "NORMAL" position and the car is not at the designated or the sky lobby level, and Phase I is not in effect, the car shall remain at the landing with the doors open and door-close buttons inoperative and shall remain in Phase II.

2.27.3.3.5 Elevators shall be removed from Phase II operation only when:

- (a) The Phase II switch is in the "NORMAL" position and the car is at the designated or sky lobby level with the doors in the normal open position; or
- (b) The Phase II switch is in the "NORMAL" position when Phase I is in effect at the designated or sky lobby level with the doors in the normal open position.

2.27.3.3.6

- (a) For all elevators, applications filed after March 12, 1991 (the effective date of adoption of Cal #11-91-BCR), that propose the installation, alteration or change of controller, elevator machinery and any other work, excluding minor alteration and ordinary repairs, and applications filed for new elevators, the cost of which exceeds \$10,000 per car over 12-month period, shall comply with the requirements of this subdivision.
- (b) In elevators complying with the requirements of paragraph (a) above, a 3 position switch labeled "NORMAL," "HOLD," and "FIREMAN SERVICE" shall be required to replace the existing 2 position switch ("NORMAL" and "FIREMAN SERVICE"). The new "HOLD" position shall be marked by engraving or by affixing a permanent label to the operating panel of the elevator.

Delete and revise Section 2.27.3.4 to read as follows:

2.27.3.4 Interruption of power. Upon the resumption of power following a power interruption, the car shall move in the down direction to designated or sky lobby level. Restoration of electrical power following a power interruption shall not cause any elevator to be removed from Phase I or Phase II operation.

2.27.4 Fire-fighters' emergency operation nonautomatic elevators.

Delete and revise Section 2.27.4.1 to read as follows:

2.27.4.1 Phase I emergency recall operation. A two-position key-operated switch shall be provided at the designated or the sky lobby level only for each single elevator or for each group of elevators. The two-position switch shall be "NORMAL" and "FIREMAN SERVICE" (in that order). The commissioner with the concurrence of the fire commissioner may allow an additional two-position key-operated switch marked "NORMAL" and "FIREMAN SERVICE" (in that order) at another location. However, it shall not affect Phase I operation if the designated-level or sky lobby level smoke detector or waterflow alarm has been activated. The switch(es) shall be rotated clockwise to go from the "NORMAL" to "FIREMAN SERVICE" position. All keys shall be removable from any position.

No device, other than Phase I switch(es), smoke detectors in the elevator lobbies, machine room, or hoistway, or a waterflow alarm in lieu of smoke detectors in the elevator lobbies, shall initiate Phase I operation.

When all switches are in the "NORMAL" position, normal elevator service shall be retained and operation from the smoke detectors or waterflow alarm required shall be functional.

When a Phase I switch is in the "FIREMAN SERVICE" position, a visual and audible signal shall be provided to alert the attendant to return nonstop to the designated or sky lobby level. The visual signal shall read "FIRE RECALL – RETURN TO" {insert level to which the car should be returned (the designated level or sky lobby level)}. The smoke detectors or waterflow alarm shall be activated when Phase I is in effect.

Delete and revise Section 2.27.4.2 to read as follows:

2.27.4.2 Phase I smoke detectors or waterflow alarm devices activation. Smoke detectors shall be installed in accordance with the requirements of §2.27.3.2 Phase I operation and shall be initiated when either any smoke or waterflow alarms are activated.

- (a) When the lowest landing of elevators is above the designated level, such as the sky lobby level, the activation of smoke detectors or a waterflow alarm in the sky lobby or sky lobby floor shall cause such elevators to return nonstop to a floor two stories above the sky lobby level or in the absence of a stop at that floor, to the nearest landing above the sky lobby level.
- (b) Elevators shall react only to the first smoke detector zone that is activated for that group.
- (c) Smoke detectors and/or smoke detector systems shall not be self-resetting.
- (d) Activation of smoke detectors to initiate elevator recall shall override any automatic programming for car stops but shall not affect the other elevator safety circuits.
- (e) The buildings described in §2.27.3.2(1)(k) and meeting its requirements and buildings equipped throughout with an automatic sprinkler system are exempt from the requirements of this section.

2.27.5 Fire-fighters' emergency operation automatic elevators with designated attendant operation.

Delete and revise Section 2.27.5.2 to read as follows:

2.27.5.2 When operated by a designated attendant in the car (except hospital emergency service):

- (a) Elevators parked at a floor shall conform to the requirements of §2.27.3.1. At the completion of a time delay of not less than 15 seconds nor more than 60 seconds, elevators shall conform to the requirements of §2.27.3. There shall be no delay when the car is at the designated level.
- (b) A moving car shall conform the requirements of §2.27.3.

Add three new Subsections 2.27.5.3.1, 2.27.5.3.2 and 2.27.5.3.3 to read as follows:

2.27.5.3.1 Hospital emergency service recall operation.

A two-position key-operated corridor call (Hospital Emergency Service) switch shall be provided at one or more landings to activate the special control function by authorized or designated personnel. The two-position switch shall be marked "NORMAL" and "HOSPITAL EMERGENCY SERVICE." Keys shall be removal only in the "NORMAL" position.

(a) When the switch is in the "HOSPITAL EMERGENCY SERVICE" position:

- (1) All patient elevator cars equipped with the special control function shall override normal automatic operating modes for immediate recall of the patient elevator(s) to the landing at which the call is registered.
- (2) On patient elevator cars with two entrances, if both entrances can be opened at the designated level, the doors serving the corridor where the two-position hospital emergency service switch is located shall open and remain open.
- (3) A patient elevator car traveling away from the designated level shall reverse at or before the next available landing without opening its doors.
- (4) A patient elevator car stopped at a landing other than the designated level, with the doors open and in-car emergency stop switch in the run position, shall close the doors without delay and proceed to the designated level.
- (5) A visual and audible signal shall be activated within the patient elevator car to alert the passengers and/or attendant operator that the "hospital emergency service" function has been activated.
- (6) Upon arrival at the registered call landing, power operated doors shall open automatically and remain in the open position for a predetermined adjustable time period to allow the authorized personnel sufficient time to activate the "in-car" special operation function.
- (7) If the Phase I (§2.27.3.1) recall mode is initiated while the elevator is under "hospital emergency service" recall mode and "in-car" hospital emergency service is not activated, the elevator shall revert to Phase I (§2.27.3.1) operation.
- (8) Hospital emergency service corridor recall shall not override fire emergency Phase I (§2.27.3.1) or Phase II (§2.27.3.3) operation in effect.

2.27.5.3.2 Hospital emergency service in-car operation.

A two-position "NORMAL" and "HOSPITAL EMERGENCY SERVICE" key-operated switch shall be provided

in an operating panel inside the patient elevator(s) to activate the “hospital emergency service,” a special independent operating mode. The switch shall be rotated clockwise to go from the “NORMAL” to “HOSPITAL EMERGENCY SERVICE” position. It shall become effective only when the designated level corridor call “hospital emergency service” switch is in the “HOSPITAL EMERGENCY SERVICE” position and the car has returned to the designated level by “hospital emergency service” recall operation.

(a) When the “in-car” switch is in the “HOSPITAL EMERGENCY SERVICE” position, the patient elevator shall be on hospital emergency service operation, and the patient elevator shall operate as follows:

- (1) The patient elevator shall be operable only by a designated person in the car.
- (2) Activation of the “in-car” operating mode shall remove the patient elevator from normal automatic and/or attendant service.
- (3) The patient elevator(s) shall not be recalled under Phase I (§2.27.3.1) operation after the activation of “in-car” operation mode.
- (4) Doors shall remain open until the authorized person registers the car call and initiates the door closing function.
- (5) The patient elevator shall travel directly to the selected landing, overriding normal corridor call demand or Phase I (§2.27.3.1) recall and shall automatically open the doors upon the arrival at the selected landing, except when the smoke detector(s) are activated on the selected landing or the waterflow alarm is activated on that floor. In such case, before the patient elevator has reached the selected landing, the patient elevator shall stop at a floor two stories below the selected landing or in the absence of a stop at that floor, at the nearest landing below the selected landing.
- (6) When the patient elevator reaches the selected floor and the smoke detector(s) are activated on that landing or the waterflow alarm is activated on that floor before the doors are open, the patient elevator, without opening the doors, shall travel to a floor two stories below the selected landing or in the absence of a stop at that floor, to the nearest landing below the selected landing.
- (7) Doors shall remain open with the audible and visual signal functioning until the “in-car” switch is turned to the “NORMAL” position or for a predetermined adjustable time period to allow the removal of patients from the car and the patient elevator is placed into automatic, attendant or Phase I (§2.27.3.1) if in effect, operating mode.
- (8) Upon transfer from “HOSPITAL EMERGENCY SERVICE” back to normal opera-

tion during a fire emergency and Phase I (§2.27.3.1) is in effect, the patient elevator shall be automatically recalled to the designated level.

2.27.5.3.3 Hospital emergency service switches color. The color of the Hospital Emergency Service switches located in the corridor at the designated level and inside the patient elevator(s) operating panel shall be blue.

Delete Section 2.27.7 in its entirety.

Section 2.27.7 Reserved.

Delete and revise Section 2.27.8 to read as follows:

2.27.8 Switch keys. The switches required by §2.27.2 through §2.27.5 for all elevators in a building shall be operable only by a citywide standard key 2642. The citywide standard key shall be designed in accordance with the requirements of the Fire Department and shall be obtained only through Fire Department authorization. Citywide standard keys shall be kept on the premises by a person responsible for the maintenance and operation of the elevators in a location readily accessible to authorized persons in an emergency, but not where they are available to the public.

SECTION 2.29 IDENTIFICATION

Delete and revise Section 2.29.1 to read as follows:

2.29.1 Identification of equipment. Each elevator shall be assigned a unique alphabetical or numerical identification, a minimum of 6 mm ($1/4$ in.) in height. The identification number shall be applied to the following locations:

- (a) The driving machine;
- (b) MG and/or transformers set;
- (c) Controller;
- (d) Selector;
- (e) Governor;
- (f) Main line disconnect switch;
- (g) The crosshead, or where there is no crosshead, the car frame, such that it is visible from the top of the car;
- (h) The car operating panel, minimum of 13 mm (0.5 in.) in height;
- (i) Adjacent to or on every elevator entrance at the designated level, minimum of 75 mm (3 in.) height; and
- (j) Each bank of elevators shall be identified by an alphabetic letter.

Add new Section 2.29.1.1 to read as follow:

2.29.1.1 New York City identification number. Each elevator shall be assigned a unique numerical identification a minimum of 6 mm ($1/4$ in.) in height. The city identification number shall be applied to the following locations:

- (a) The driving machine;
- (b) MG and/or Transformers set;

- (c) Controller;
- (d) Main line disconnect switch;
- (e) The crosshead, or where there is no crosshead, the car frame, such that it is visible from the top of the car;
- (f) The car operating panel (main panel only).

PART 3 HYDRAULIC ELEVATORS

SECTION 3.7 MACHINE ROOMS AND MACHINERY SPACES

Revise first paragraph of Section 3.7 to read as follows:

Machine rooms and machinery spaces shall conform to §2.7.1 through §2.7.5 and §2.7.7 and shall be vented to the outside air naturally or mechanically.

SECTION 3.26 OPERATING DEVICES AND CONTROL EQUIPMENT

3.26.3 Anticreep and leveling operation.

Revise Section 3.26.3.1.2 to read as follows:

3.26.3.1.2 The anticreep device shall maintain the car within [25 mm (1 in.)] 13 mm (1/2 in) of the landing irrespective of the position of the hoistway door.

PART 4 ELEVATORS WITH OTHER TYPES OF DRIVING MACHINES

SECTION 4.3 HAND ELEVATORS

Delete Section 4.3 in its entirety:

Section 4.3 Reserved.

PART 5 SPECIAL APPLICATION ELEVATORS

SECTION 5.2 LIMITED-USE/LIMITED-APPLICATION ELEVATORS

5.2.1 Electric limited-use/limited-application elevators.

Revise Subsection (b) of Section 5.2.1.16.1 to read as follows:

5.2.1.16.1 Rate load and platform area.

- (b) The inside net platform area shall not exceed 18 ft² (1.67 m²) and in no event shall be less than 1219 mm by 1219 mm (4 ft by 4 ft) with a minimum 812 mm (32 in.) clear door opening. The car operating panel shall be on the strike wall.

PART 6 ESCALATORS AND MOVING WALKS

SECTION 6.1 ESCALATORS

6.1.1 Protection of floor openings.

Delete and revise Section 6.1.3.3.5 it to read as follows:

6.1.3.3.5 Clearance between skirt and step. The clearance on either side of the steps between the step and the adjacent skirt panel shall not be more than 4 mm (0.16 in.), and the sum of the clearances on both sides shall be not more than 7 mm (0.28 in.).

Add new text to Subsection (c) of 6.1.3.3.6 to read as follows:

6.1.3.3.6 Skirt panels.

- (c) The exposed surfaces of the skirt panels adjacent to the steps shall be smooth and made from a low friction material, or permanently treated with a friction-reducing material. Untreated surfaces, such as porcelain, enameled steel bronze, or stainless steel, are not acceptable.

Delete Section 6.1.3.3.7 in its entirety:

6.1.3.3.7 Reserved.

Delete and revise Section 6.1.3.3.8 to read as follows:

6.1.3.3.8 Skirt deflector devices. Deflector devices shall be required and extend from skirt panels parallel to the escalator path of travel. Means to secure such deflector devices are required to be on the exposed surface of the skirt. Any exposed fastener heads shall be of the tamper-resistant type and flush to within 1 mm (0.04 in.).

Revise Section 6.1.3.5.4 to read as follows:

6.1.3.5.4 Clearance between step threads. The maximum clearance between step treads on the horizontal run shall be 6 mm (0.25 in.). (See Appendix I, Fig. I7 [I6].)

Delete and revise Section 6.1.6.3.3 to read as follows:

6.1.6.3.6 Skirt obstruction device. Means shall be provided to cause the electric power to be removed from the escalator driving machine motor and brake, if an object becomes caught between the step and the skirt as the step approaches the upper combplate, intermediate device or lower comb plate. On units having a run of 6096 mm (20 ft.) or more, intermediate devices shall be provided on both sides of the escalator with devices located at intervals of 3048 mm (10 ft.) or less. The activation of an intermediate device shall stop the escalator at a rate not greater than 914 mm (3 ft.) per second square in the direction of travel. The upper and lower comb plate devices shall be located so that the escalator will stop before that object reaches the comb plate. The activation of any skirt device shall stop the escalator when a load equal to the brake rated load is applied while the escalator is running.

Revise Section 6.1.6.3.13 to read as follows:

6.1.6.3.13 Comb-step impact devices. Devices shall be provided that will cause the opening of the power circuit to the escalator driving machine motor and brake if either:

- (a) A horizontal force not greater than 1 780 N (400 lbf) in the direction of travel is applied at either side, or not greater than 3 560 N (800 lbf) applied at the center of the front edge of the comb plate; or
- (b) A resultant vertical force not greater than [670 N (150 lbf)] 268 N (60 lbf) in the upward direction is applied at the center of the front of the comb plate.

Revise Section 6.2.6.3.11 to read as follows:

6.2.6.3.11 Comb-pallet impact devices. Devices shall be provided that will cause the opening of the power circuit to the moving walk driving-machine motor and brake if either:

- (a) A horizontal force not greater than 1 780 N (400 lbf) in the direction of travel is applied at either side, or not greater than 3 560 N (800 lbf) applied at the center of the front edge of the combplate; or
- (b) A resultant vertical force not greater than [670 N (150 lbf)] 268 N (60 lbf) in the upward direction is applied at the center of the front of the combplate. These devices shall be of the manual-reset type.

PART 7 DUMBWAITERS AND MATERIAL LIFTS

SECTION 7.4 MATERIAL LIFTS WITHOUT AUTOMATIC TRANSFER DEVICES

7.4.2 Classification

Delete and revise Section 7.4.2 to read as follows:

7.4.2 Classification of material lifts.

- (a) Type A Material Lifts shall conform to ASME B20.1.
- (b) Type B Material Lifts are not permitted.

SECTION 7.5 ELECTRIC MATERIAL LIFTS WITHOUT AUTOMATIC TRANSFER DEVICES

7.5.1.2 Car doors and gates.

Delete and revise Section 7.5.1.2.1 to read as follows:

7.5.1.2.1 Requirement §2.14.4.1 applies to Type A Material Lifts.

7.5.3 Capacity and loading.

Add new Section 7.5.3.5 to read as follows:

7.5.3.5 The maximum capacity shall be 2,500 pounds at 50 pounds per square foot.

7.5.5 Speed governors.

Revise Section 7.5.5.1 to read as follows:

7.5.5.1 The requirements of §2.18.1 apply, except the rated speed shall be modified to read [1 m/s (200 ft/min)] 0.125 m/s (25 ft/min).

7.5.12 Operating devices and control equipment.

Delete and revise Section 7.5.12.1.5 to read as follows:

7.5.12.1.5 The requirements of §2.26.2.5 do not apply. An emergency stop switch (switches) conforming to §2.26.2.5(a), (b), and (c) shall be provided to stop operation of the material lift, and the door and gate operation (if power operated). The emergency stop switch shall be located in each hall station.

Delete and revise Section 7.5.12.1.10 to read as follows:

7.5.12.1.10 The requirement of §2.26.2.15 applies.

PART 8 GENERAL REQUIREMENTS

SECTION 8.1 SECURITY

8.1.2 Group 1: Restricted.

Add new Note (p) to Section 8.1.2 to read as follows:

- (p) The requirements of §2.14.1.10 and §5.1.11.1.2(d), side emergency exit doors apply.

8.1.4 Group 3: Emergency operation.

Delete and revise Section 8.1.4 to read as follows:

8.1.4 Group 3: Emergency operation. Group 3 covers access or operation of equipment by fire fighters and emergency personnel. This key shall be a citywide standard key 2642 as defined by the New York City Fire Department.

SECTION 8.4 ELEVATOR SAFETY REQUIREMENTS FOR SEISMIC RISK ZONE 2 OR GREATER

8.4.4 Car enclosures, car doors and gates and car illumination.

Delete Section 8.4.4 in its entirety.

Section 8.4.4 Reserved.

SECTION 8.6 MAINTENANCE, REPAIR, AND REPLACEMENT

8.6.4.10 Refastening or resocketing of car hoisting ropes on winding-drum machines.

Delete and revise Section 8.6.4.10.1 to read as follows:

8.6.4.10.1

- (1) The hoisting ropes of elevators having winding-drum driving-machines with 1:1 roping, if of

the babbitted rope socket type, shall be resocketed at intervals no longer than:

- (a) 1 year, for machines located over the hoistway;
 - (b) 2 years, for machines located below or at the side of the hoistway;
 - (c) 4 years, for all counterweight cable ends of drum machines;
- (2) In addition to the foregoing requirements, rope fastenings shall be resocketed when an inspection reveals any evidence of failure at the shackle regardless of the period of time since last re-shackling.
- (3) Where auxiliary rope-fastening devices conforming to the requirements of §2.20.10 or where car hoist ropes with an additional approved type emergency clamping devices are installed, refastening at the period specified is not required provided that, where such devices are installed, all hoisting ropes shall be refastened on the failure or indication of failure of any rope fastening. Wedge clamp shackles shall not be used on drum machines.
- (4) Where the elevator is equipped with a drum counterweight, the fastenings shall be examined for fatigue or damage at the socket. Where fatigue or damage is detected, the ropes shall be refastened in conformance with §8.6.4.10.2.

Delete and revise Section 8.6.4.10.3 to read as follows:

8.6.4.10.3 Tags. A legible metal tag shall be securely attached through one of the tapered rope sockets during each resocketing, (as shown in the diagram below) and shall bear the following information:

- (a) The name of the person or firm who performed the resocketing and;
- (b) The date on which the rope was resocketed. The material and marking of the tags shall conform to §2.16.3.3, except that the height of the letters and figures shall be not less than 1.5 mm (0.0625 in.).

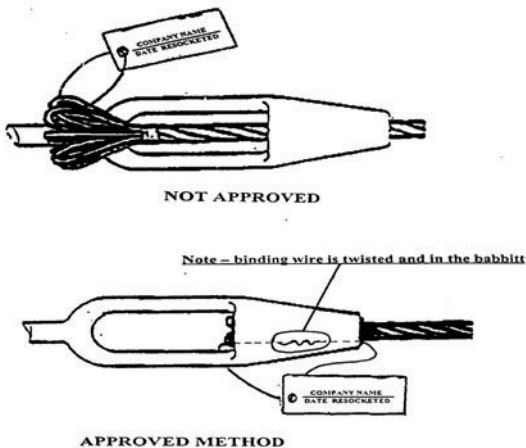


Diagram 8.6.4.10.3

8.6.8.3 Step/skirt performance index.

Delete Section 8.6.8.3 in its entirety.

Section 8.6.8.3 Reserved.

SECTION 8.7 ALTERATIONS

8.7.2 Alterations to electric elevators.

Delete and revise Section 8.7.2.13, Subsection (c) to read as follows:

8.7.2.13 Door reopening device.

- (c) When fire-fighters' emergency operation is provided, door reopening devices and door closing during Phase I and Phase II shall comply with the requirements applicable at the time of installation or alteration.

8.7.2.14 Car enclosures, car doors, and gates and car illumination.

Revise Section 8.7.2.14.1 to read as follows:

- 8.7.2.14.1** Where an alteration consists of the installation of a new car, the installation shall conform to §2.12.6, §2.14, §2.15, and §2.17 (see also §8.7.2.15.1).

Delete and revise Subsection (e) of Section 8.7.2.14.2 to read as follows:

8.7.2.14.2

- (e) Side emergency exits may be permanently fixed in the closed position provided that the corresponding side emergency exit on an adjacent car shall also be fixed in the closed position. The installation shall conform to §2.12.6.

Revise Section 8.7.2.14.3, Subsection (b)(2) to read as follows:

8.7.2.14.3

- (b)(2) Smoke development of 0 to 100 [450].

8.7.2.17 Change in travel or rated speed.

Add new Subsection (4) to 8.7.2.17.1(c) to read as follows:

8.7.2.17.1 Increase or decrease in travel.

- (4) Where the only hoistway alteration is the decrease in travel at the upper end of the travel, the installation shall be modified as follows:
 - (i) Terminal stopping devices shall be provided based on the new top terminal landing location and the final limit switch shall be of the manual reset type.
 - (ii) A key controlled switch shall be provided in accordance with §8.1.5 (i.e., Group 4) requirements to by-pass the new top terminal stopping devices, when the elevator transfer switch is placed in the top-of-car inspection operation position, for access to the hoistway above the terminal landing.

The switch shall be manually operated, be labeled "Terminal By-Pass," and shall have two positions; by-pass and normal.

The switch shall be located in the hoistway, in the vicinity of the terminal limits and shall be accessible to a person standing on the car top. The car transfer switch shall not be removed from the top-of-car inspection operation position until the terminal limit by-pass switch is placed in the Normal position.

(iii) Existing terminal stopping devices shall remain functional. The hoistway door electro-mechanical safety interlocks shall remain in the safety circuit and locked with door panel(s) separately secured in closed position on the hoistway side.

(iv) The car operating panel shall be removed with associated labeling and signaling.

8.7.2.25 Driving machines and sheaves.

Delete and revise Subsection (a) of Section 8.7.2.25.1 to read as follows:

8.7.2.25.1 Alterations to driving machines and sheaves.

(a) Where a driving machine is installed as part of an alteration, the installation shall conform to §2.7.2.2, §2.9, §2.10.1, §2.19, §2.20, §2.24, and §2.26.8. The requirements of §2.7.2.2 and §2.19 shall apply only to the extent that the existing installation permits.

8.7.2.27 Operating devices and control equipment.

Revise Subsection (a) of 8.7.2.27.4 to read as follows:

8.7.2.27.4 Controllers.

(a) Where a controller is installed as part of an alteration, it shall conform to §2.22, §2.25, §2.26.1.4, §2.26.1.5, §2.26.4 through §2.26.9, and §2.27.2 through §2.27.8.

Revise Subsection 8.7.2.27.5(e) to read as follows:

8.7.2.27.5 Change in type of motion control.

(e) Car overspeed protection and unintended movement protection shall conform to §2.19 to the extent that the existing installation permits. Where hoisting machinery is retained or altered in such a way that makes the installation of an emergency braking system per 2.19.3 impossible, conformance with §2.19 is not required.

SECTION 8.8 WELDING

8.8.1 Qualification of welders.

Revise Section 8.8.1 read as follows:

8.8.1 Qualification of welders. Where required elsewhere in this code, welding of parts, except for tack welds later incorporated into finished welds, shall be undertaken:

- (a) by welders qualified in accordance with the requirements of Section 5 of ANSI/AWS D1.1, whereby the welders shall be qualified by the manufacturer or contractor; a professional consulting engineer; or a recognized testing laboratory; or
- (b) by a fabricator qualified to the requirements of CSA W47.1, whichever is applicable (see Part 9), and
- (c) as per department rules.

SECTION 8.10 ACCEPTANCE INSPECTIONS AND TESTS

8.10.1 General requirements for acceptance inspections and tests.

Delete and revise Section 8.10.1.1.3 to read as follows:

8.10.1.1 Persons authorized to make inspections and tests.

8.10.1.1.3 The inspector shall be a special inspector who meets the qualifications prescribed by rule of the department.

8.10.2. Inspection and test requirements for new installations

Delete and revise Subsection (o) of Section 8.10.2.2.2 to read as follows:

8.10.2.2.2 Machine room.

(o) **Braking System.** For passenger elevators and all freight elevators, the brake shall be tested for compliance with applicable requirements. A test of the brake shall be made with 125 percent of load. When the car returns to one of the lower landings, the main line switch shall be pulled while the car is running at inspection speed to ensure the brake has set and holds the load. The driving machine shall safely lower, stop, and hold the car with this load. Freight elevators of class C-2 loading shall sustain and level the elevator car. (§2.16.6) (Item §2.15 of A17.2).

(1) Braking system (§2.24.8.2.2).

(2) Electromechanical brake (§2.24.8.3).

8.10.4 Acceptance inspection and tests of escalators and moving walks.

Delete and revise Subsection (p) of Section 8.10.4.1.1 to read as follows:

8.10.4.1.1 External inspection and tests.

(p) *Skirt Panels (Items 1.17 and 3.17)*

(1) Clearance between skirt and steps [§6.1.3.3.5 or §6.2.3.3.5(a), and §6.2.3.3.6(a)].

(2) Height above step [§6.1.3.3.6(a) or §6.2.3.3.5(b), and §6.2.3.3.6(b)].

(3) Deflection [§6.1.3.3.6(b) or §6.2.3.3.6(c)].

(4) Smoothness [§6.1.3.3.6(c) or §6.2.3.3.6(d)].

8.10.5 Acceptance inspection and tests of other equipment.

Delete Section 8.10.5.3 in its entirety.

8.10.5.3 Reserved.

**SECTION 8.11
PERIODIC INSPECTIONS AND TESTS**

8.11.1 General requirements for periodic inspections and tests.

Delete and revise Section 8.11.1.1 to read as follows:

8.11.1.1 Persons authorized to make inspections and Tests. The inspector shall be a special inspector who meets the qualifications prescribed by rule of the department.

Delete and revise Section 8.11.1.3 to read as follows:

8.11.1.3 Periodic inspection and test frequency. See Chapter 3 of Title 28 of the *Administrative Code*.

(NOTE: Required intervals for periodic inspections and tests can be found in Table N1 as modified below in this appendix)

Delete and revise Section 8.11.1.4 to read as follows:

8.11.1.4 Installation placed out of service. An installation placed out of service permanently or temporarily so that it cannot be operated for a definite period shall comply with the following requirements:

8.11.1.4.1 Elevators not in use but available for service. Elevators not in use but available for service are those elevators whose power feed line has been disconnected by opening the main line switch. All required tests shall be regularly performed and a periodic inspection shall be made, and fees shall be paid pursuant to this code. An elevator inspector shall verify that these tests and inspections are being performed, and that the power was interrupted.

8.11.1.4.1.1 Elevators placed out of service (dismantled). Elevators placed out of active service by dismantling shall meet the requirements for installations placed out of service. In addition, an application shall be filed with the department and an inspection fee charged. Thereafter, one (1) additional inspection per year shall be made to verify that the status is unchanged and fees shall be paid for such inspection. Before the installation is put back in service, an application shall be filed with the department. For access to the bottom of the hoistway, the requirements of §8.11.1.4.1.2(b)(4) shall apply.

8.11.1.4.1.2 Elevators removed and permanently discontinued – one elevator shaftway. When a single elevator with one elevator shaftway is removed and permanently discontinued, an application shall be filed with the department and inspection fees charged. Such process shall meet the following requirements:

- (a) If it is proposed to extend the floor at every story of the building, the new construction shall be the same or of similar construction as the existing adjacent floor and of equivalent or better fire resistive rating. All hoistway equipment shall be completely removed; rails may remain.

(b) If the hoistway shaft is to remain open:

- (1) All hoistway equipment shall be completely removed; rails may remain. Except as provided in Item 4, all door and window assemblies opening onto masonry shaftway and masonry enclosed associated machine rooms shall be completely removed and the open space so created shall be filled with the same or similar material of equal thickness and of equivalent or better fire-resistive rating as the adjacent masonry.
- (2) Except as provided in Item 3, all door and window assemblies opening onto the hoistway shaft that were originally enclosed with an open wire screen and subsequently enclosed with other than masonry units (i.e., metal lath and plaster or transit boards) shall remain. Such door and window assemblies shall be fastened in a closed position and shall be adequately welded or bolted shut. The assembly shall be enclosed in material of equal or similar thickness of equivalent or better fire-resistive rating as the adjacent enclosure.
- (3) The sidewalk elevator door at the street level shall be fastened in a closed position and shall be adequately welded shut. The underside of such door shall be properly reinforced and supported by steel beams and columns to support the same loading as the sidewalk.
- (4) Fire-fighter access to the bottom of the hoistway (elevator pit) shall be provided through the door assembly of the pit door and shall meet the following requirements:
 - (i) If the machine room is located at or near the level of the bottom of the shaftway and is so located that access to the bottom of the shaftway is readily available through the machine room, the door to the machine room shall be kept closed with a heavy-duty dead bolt locking device.
 - (ii) If the machine room is located other than at or near the level of the bottom of the shaftway or the bottom of the shaftway is not otherwise readily accessible through the machine room, the lowermost door opening onto the shaftway shall be kept closed with a heavy-duty dead bolt locking device. A conspicuous sign of 26 mm (1 in.) block letters with contrasting background permanently affixed to the door and shall read "HOISTWAY."
 - (iii) The key to the locking device required in Items (i) and (ii) above shall be kept by the building superintendent and shall be readily available to the commis-

sioner or the commissioner's representative and to fire fighters.

- (c) The ventilation opening (smoke hole) in the flooring provided at the top of the hoistway immediately below the sheaves or at the level of the top of the machine room floor beams and the ventilation opening at the exterior portion of the machine room shall be maintained.
- (d) All electric service to the elevator hoistway and machine room shall be disconnected outside the confines of the elevator hoistway and machine room.

8.11.1.4.1.3 Elevators removed and permanently discontinued—multielevator shaftway. When a single elevator in multielevator shaftway is removed and permanently discontinued, an application shall be filed with the department and inspection fees charged. Such process shall meet the following requirements:

- (a) If it is proposed to extend the floor at every story of the building, the new construction shall be the same or of similar construction as the existing adjacent floor and of equivalent or better fire resistive rating. All hoistway equipment for the discontinued elevator shall be completely removed; rails may remain. The shaft enclosure shall be rearranged so that the remaining operating elevators are properly enclosed to maintain the integrity of the shaftway.
- (b) If the hoistway shaft is to remain open:
 - (1) All hoistway equipment for the discontinued elevator shall be completely removed; rails may remain. All door assemblies serving the discontinued elevator, openings onto masonry shaftway shall be completely removed and the open space so created shall be filled with the same or similar material of equal thickness of equivalent or better fire-resistive rating as the adjacent masonry.
 - (2) All door assemblies serving the discontinued elevator, opening onto the hoistway shaft that were originally enclosed with an open wire screen and subsequently enclosed with other than masonry units (i.e. metal lath and plaster or transite boards), shall remain. Such door assemblies shall be fastened in a closed position and shall be adequately welded shut. The assembly shall be enclosed in material of equivalent or better fire resistive rating as the adjacent enclosure.

8.11.1.4.2 Escalator installation placed out of service.

8.11.1.4.2.1 Escalators not in use but available for service. Escalators not in use but available for service are those escalators whose power feed lines have been disconnected from the main line disconnect switch and whose entrances have been barricaded. All required tests

shall be regularly performed and a periodic inspection shall be made, and fees shall be paid pursuant to this code. An elevator inspector shall verify that these tests and inspections are being performed, and that the power was interrupted.

8.11.1.4.2.2 Escalators discontinued or placed out of service. Escalators discontinued or placed out of service shall comply with § 8.11.1.4.2.1. An application shall be filed with the department and an inspection fee charged. Thereafter, one (1) additional inspection per year shall be made to verify that the status is unchanged and fees shall be paid for such inspection. Before the installation is put back in service, it shall be subject to all of the routine and periodic inspections and tests required by this code.

8.11.1.4.2.3 Escalators removed and permanently discontinued. An application shall be filed with the department and inspection fees charged. The escalator steps, newels, rails, all wire cables, and other equipment and machinery shall be completely removed. An opening created by the removal of the escalator shall be filled with new construction of the same or similar construction as the existing adjacent floor and of equivalent or better fire resistive rating.

8.11.1.4.3 Moving walk installation placed out of service.

8.11.1.4.3.1 Moving walks not in use but available for service. Moving walks not in use but available for service are those moving walks whose power feed lines have been disconnected from the main line disconnect switch and whose entrances have been barricaded. All required tests shall be regularly performed and a periodic inspection shall be made and fees charged. An elevator inspector shall verify that these tests and inspections are being performed, and that the power was interrupted.

8.11.1.4.3.2 Moving walk discontinued or placed out of service. Moving walks discontinued or placed out of service shall meet the requirements of § 8.11.1.4.3.1 except for periodic inspection. An application shall be filed with the department and inspection fees charged. Thereafter, one additional inspection per year shall be made to verify that the status is unchanged and fees shall be paid for such inspection. Before the installation is placed back in service, it shall be subject to all of the routine and periodic inspections and tests required by this code.

8.11.1.4.3.3 Moving walk removed and permanently discontinued. An application shall be filed with the department and inspection fees charged. The moving walk treadways, newels, rails, all wire cables, and other equipment and machinery shall be completely removed. The truss may remain. An opening created by the removal of the moving walk shall be covered by new construction of the same or similar construction as the existing adjacent floor and of equivalent or better fire resisting rating.

TABLE [8.11.1.3] N 1
REQUIRED INSPECTION AND TEST INTERVALS IN "MONTHS"

Reference Section	Equipment Type	PERIODIC TESTS									
		PERIODIC INSPECTIONS		Category One		Category Three		Category Five			
		Requirement	Interval	Requirement	Interval	Requirement	Interval	Requirement	Interval		
8.11.2	Electric elevators	8.11.2.1	6-12	8.11.2.2	12	N/A	N/A	8.11.2.3	60		
8.11.3	Hydraulic elevators	8.11.3.1	6-12	8.11.3.2	12	8.11.3.3	36	8.11.3.4	60		
8.11.4	Escalators & moving walks	8.11.4.1	6-12	8.11.4.2	12	N/A	N/A	8.11.2.3, 8.11.3.4	N/A		
8.11.5.1	Sidewalk elevators	8.11.2.1, 8.11.3.1	6-12	8.11.2.2, 8.11.3.2	12	8.11.3.3	[8.11.]36	8.11.2.3, 8.11.3.4	60		
8.11.5.2	Private residence elevators	8.11.2.1, 8.11.3.1	—	8.11.2.2, 8.11.3.2	12	8.11.3.3	36	8.11.2.3, 8.11.3.4	60		
8.11.5.4	Dumbwaiters	8.11.2.1, 8.11.3.1	6-12	8.11.2.2, 8.11.3.2	12	8.11.3.3	36	8.11.2.3, 8.11.3.4	60		
8.11.5.5	Materials Lifts	8.11.2.1, 8.11.3.1	6-12	8.11.2.2, 8.11.3.2	12	8.11.3.3	36	8.11.2.3, 8.11.3.4	60		
8.11.5.5	Vertical reciprocating conveyors (VRC)	8.11.2.1, 8.11.3.1	6-12	8.11.2.2, 8.11.3.2	12	8.11.3.3	36	8.11.2.3, 8.11.3.4	60		
8.11.5.6	Special purpose personnel elevators	8.11.2.1, 8.11.3.1	6-12	8.11.2.2, 8.11.3.2	12	8.11.3.3	[8.11.]36	8.11.2.3, 8.11.3.4	60		
8.11.5.7	Inclined elevators	8.11.2.1, 8.11.3.1	6-12	8.11.2.2, 8.11.3.2	12	8.11.3.3	[8.11.]36	8.11.2.3, 8.11.3.4	60		
8.11.5.8	Shipboard elevators	8.11.2.1, 8.11.3.1	6-12	8.11.2.2, 8.11.3.2	12	8.11.3.3	[8.11.]36	8.11.2.3, 8.11.3.4	60		
8.11.5.9	Screw-column Elevators	8.11.2.1, 8.11.3.1	6-12	8.11.2.2, 8.11.3.2	12	8.11.3.3	[8.11.]36	8.11.2.3, 8.11.3.4	60		
8.11.5.10	Rooftop elevators	8.11.2.1, 8.11.3.1	6-12	8.11.2.2, 8.11.3.2	12	8.11.3.3	[8.11.]36	8.11.2.3, 8.11.3.4	60		
8.11.5.12	Limited-use/Limited-application elevators	8.11.2.1, 8.11.3.1	6-12	8.11.2.2, 8.11.3.2	12	8.11.3.3	[8.11.]36	8.11.2.3, 8.11.3.4	60		
8.11.5.13	Elevators used to construction	8.11.2.1, 8.11.3.1	6-12	8.11.2.2, 8.11.3.2	12	8.11.3.3	[8.11.]36	8.11.2.3, 8.11.3.4	60		

Delete and revise Section 8.11.1.6 to read as follows:

8.11.1.6 Test tags. A metal test tag with the test date, the category number requiring the test, and the name of the person or firm performing the test shall be installed in the machine room and at the vicinity of the lower starting station of escalators and moving walks for all Category 1, 3 and 5 tests.

Add new language to Section 8.11.2.3.4 to read as follows:

8.11.2.3.4 Braking system. For passenger elevators and all freight elevators, the brake shall be tested for compliance with applicable requirements. The load shall be placed in the car as shown in Table 8.11.2.3.4 and the car run to the lowest landing by normal operating means. The driving machine shall safely lower, stop and hold the car with this load. Freight elevators of Class C-2 loading shall sustain and level the elevator car.

A test of the brake shall be made in accordance with §8.10.2.2.2 (o).

Delete Section 8.11.4.2.19 in its entirety.

Section 8.11.4.2.19 Reserved.

Delete and revise Section 8.11.4.2.20 to read as follows:

8.11.4.2.20 Clearance between step and skirt. Escalators installed under ASME A17.1d-2000 shall be tested as follows:

- (a) The clearance between step and skirt shall be taken at each step. These measurements shall be made independently on each side of the escalator.

**CHAPTER K2
MODIFICATIONS TO ASME B20.1-2003,
SAFETY STANDARD FOR CONVEYORS AND
RELATED EQUIPMENT**

K201.1 General. As referenced in Section 3001.2 of the *New York City Building Code*, the provisions of ASME B20.1-03 shall be modified in accordance with this chapter. The section numbers correlate to those in the referenced ASME standard. Refer to the rules of the department for any subsequent additions, modifications or deletions that may have been made to this standard in accordance with Section 28-103.19 of the *Administrative Code*.

1 SCOPE

Revise the text of Section 1 to read as follows:

This standard applies to the design, construction, installation, maintenance, inspection, and operation of conveyors and conveying systems in relation to hazards. The conveyors may be of the bulk material, package, or unit handling types where the installation is designed for permanent, temporary, or portable operation.

This standard shall apply, with the exceptions noted below, to all conveyor installations.

This standard specifically excludes any conveyor designed for, installed for, or used [primarily] for the movement of human beings. This standard does, however, apply

to certain conveying devices that incorporate within their supporting structure, work stations or operator's stations specifically designed for authorized personnel.

This standard does not apply to conveyors such as underground mine conveyors for which specific standards are already in effect, or to equipment such as industrial trucks, tractors, trailers, automatic guided vehicles, tiering machines (except pallet load tierers), cranes, hoists, power shovels, power scoops, bucket drag lines, trenchers, platform elevators designed to carry passengers or operator, manlifts, moving walks, moving stairways (escalators), highway or railroad vehicles, cableways, tramways, dumbwaiters, pneumatic conveyors, robots or integral machine transfer devices. Some of the foregoing have specific standards.

The provisions of this Standard shall apply to equipment installed one year after the standard's date of issuance.

4 DEFINITIONS

Revise the definition "Vertical reciprocating conveyor" in Section 4 to read as follows:

CONVEYOR, VERTICAL RECIPROCATING. A permanent reciprocating power or gravity actuated unit (not designed to carry passengers or an operator) that receives objects on a carrier and transmits these objects vertically between two or more levels.

6 SPECIFIC SAFETY STANDARDS

6.21 Vertical reciprocating conveyors.**6.21.1 Add new Subsections d, e, f, g, h, i, j and k to Section 6.21.1 to read as follows:****6.21.1 Safety considerations.**

- (d) Travel distance shall be limited to less than 22 860 mm (75 ft.) with a maximum of four landings served.
- (e) Conveyor(s) shall be enclosed in a 2-hour fire rated hoistway, equipped with a minimum 1½ hour fire-rated entrance at each landing served.
- (f) Access at landings shall be a restricted area for authorized personnel with no public access.
- (g) Where there is an occupied space or an unoccupied space not secured against unauthorized access under the hoistway, the conveyor shall be equipped with a safety designed to stop and hold the conveyor with the rated full load capacity independent of the hoisting or driving mechanism.
- (h) The operating device shall not be located inside the conveyor enclosure and must be external to the hoistway at each landing served.
- (i) The system shall incorporate a position indicator at each floor landing to register the location of the conveyor.

- (j) The rated load capacity shall not be less than 239 kg/m² (49 lbs. per sq. ft.) with a maximum capacity of 9072 kg (20,000 lbs.).
- (k) The rated speed shall not exceed 406 mm/sec (80 FPM).
- (l) VRCs are permitted only in commercial and industrial occupancies.

6.21.2 Revise Subsections (c) and (d) of Section 6.21.2 to read as follows:

6.21.2 Guarding.

- (c) Vertical reciprocating conveyors designed to automatically receive and discharge material [may] shall have interlocked doors as in (b) above or, as an alternative, may be guarded by a suitable enclosure extending from the path of the moving carrier.
- (d) Where the application requires that personnel walk onto the carrier to load or unload material, the carriers shall be provided with a conveyor enclosure securely fastened to the conveyor platform. The enclosure walls shall be of solid, grille or perforated construction; and shall be of such strength and support that when subjected to a leaning or falling rated load on the conveyor, the enclosure walls will not deflect or deform in a way that reduces running clearances to less than 13 mm (0.5 in.). Enclosure entrance(s) shall be provided with solid doors or gates; and shall guard the full width opening with a minimum height of 2030 mm (80 in.). Grille or perforated portions of conveyor enclosures and entrance gates shall reject a ball 38 mm (1.5 in.) in diameter [with standard railings, snap chains, or equivalent across the loading/unloading side(s). Snap chains shall be at least 39 in. at their lowest point.]