

## **Administrative Policy**

### **Field Services & Public Safety, Elevator Program**

**Number:** 07-16-105

**Subject:** Enforcement of American Society of Mechanical Engineers (ASME) A17.3-2015 Safety Code for Existing Elevators and Escalators

**Issued:** February 24, 2025

**Reference:** RCW [70.87.020](#) and [70.87.110](#)  
WAC [296-96-23000](#)  
Reference Appendix A

### **Purpose and Description**

Elevator stakeholders have raised concerns about the cost and other impacts from the adoption of ASME A17.3-2015 and confusion on how the now-expired timelines impact compliance under [WAC 296-96-23000](#).

The Department of Labor and Industries (Department) has reviewed the history of incidents and the existing elevator rules and determined that additional review of the ASME A17.3-2015 requirements is appropriate. The Department, under law, has authority to do this work under the following:

- [RCW 70.87.110](#) allows the department to modify or waive requirements whenever any requirements are shown to be impracticable, such as involving expense not justified by the protection secured, when the equivalent or safer construction is secured in other ways.
- [RCW 70.87.020](#) has additional allowances for the Program to allow exception by policy to ensure that all conveyances be reasonably safe to persons with the provisions of this chapter by applicable statutes, orders, and rules of the department.

### **Policy**

This policy establishes the Department's complete suspension of enforcement of ASME A17.3-2015. The Department is using an exception available under law for this policy. This policy takes effect February 24, 2025, and shall remain in effect until the Department adopts later versions of elevator code through the rulemaking process.

While the Department works on rulemaking, this exception policy provides proven safe minimal expectations for compliance.

### **Responsibilities of Inspectors:**

For conveyances required to comply with ASME A17.1-2000 and later, inspectors will use the ASME A17.2 inspection guide. Because it's an inspection guide, inspectors cite corrections from ASME A17.1.

For conveyances required to comply with code years earlier than ASME A17.1-2000, inspectors will use "Appendix A." The appendix represents a selection of older rules the department has elected to enforce while updating rules.

# Elevator Policy for Enforcement of Chapter 296-96 WAC Part D, Regulations for Existing Elevators, Material Lifts, Dumbwaiters, Escalators, and Accessibility Lifts

## Appendix A

This appendix contains select provisions of chapter 296-96 WAC Part D in effect from 1/1/14 – 9/30/18 that are acceptable minimal requirements for compliance in accordance with this policy. These rules apply to all existing conveyances, except those installed to ASME A17.1 2000 edition and later.

### PART D - REGULATIONS FOR EXISTING ELEVATORS, DUMBWAITERS, AND ESCALATORS

#### Regulations for Existing Electric Elevators, Direct Plunger and Roped Hydraulic Elevators, Escalators used to transport passengers, Electric and Hand-powered Dumbwaiters, Hand-powered Elevators, Inclined Stairway Chairlifts, Inclined and Vertical Wheelchair Lifts, and Sidewalk Elevators

**NOTE:** The following rules set the minimum standard for existing elevators, dumbwaiters, and escalators, and, where applicable, alterations.

**WAC 296-96-23100 Are keys required to be on-site?** The current language under WAC 296-96-23100 applies. See <https://app.leg.wa.gov/WAC/default.aspx?cite=296-96-23100>.

**WAC 296-96-23101 What are the conveyance number requirements?** Conveyance numbers shall be permanently painted or etched to the controller or if space does not allow, the disconnect switch. The numbers shall be legible and at a minimum of one-half inch in height or as directed by the authority having jurisdiction.

[Statutory Authority: Chapter 70.87 RCW. WSR 13-24-066, § 296-96-23101, filed 11/27/13, effective 1/1/14. Statutory Authority: RCW 70.87-020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. WSR 04-12-047, § 296-96-23101, filed 5/28/04, effective 6/30/04. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23101, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23102 Roof access through horizontal hatch-type covers.** The current language under WAC 296-96-23102 applies. See <https://app.leg.wa.gov/WAC/default.aspx?cite=296-96-23102>.

#### Subpart I Hoistways and Related Construction for Electric and Hydraulic Elevators

**WAC 296-96-23105 What is the scope of Subpart I?** (1) Subpart I, Hoistways and Related Construction for Electric and Hydraulic Elevators, is the minimum standard for all existing hydraulic and electric elevators. It applies to other equipment only as referenced in the applicable part.

(2) This subpart does not apply to elevators located in grain terminals, residential elevators, or special purpose elevators.

[Statutory Authority: Chapter 70.87 RCW. WSR 13-24-066, § 296-96-23105, filed 11/27/13, effective 1/1/14.]

#### Section 1 Hoistways

**WAC 296-96-23110 What structural requirements apply to hoistway enclosures?** (1) Local laws and ordinances establish fire-resistant requirements for hoistway enclosures.

(2) When doors and hoistway enclosures are not required to be fire resistant, the hoistway must be enclosed:

(a) With a solid material or a material with openings that will reject a 1/2 inch diameter ball; and

(b) To a height at least 6 feet above each floor or landing and any adjacent stairways treads.

(3) Hoistway enclosures must be supported and braced so as to deflect no more than one inch when subjected to a 100 pound force perpendicularly applied at any point.

(4) Hoistway enclosures adjacent to counterweights must extend the full height of the floor and 6 inches past the counterweight raceway.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23110, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23111 Are guards required for windows in hoistway enclosures?** (1) Guards are required on outside hoistway windows if the windows are located:

(a) Ten stories or less above a thoroughfare; or

(b) Three stories or less above the roof of an adjacent building.

(2) Hoistway windows can be guarded by one of the following methods:

(a) By vertical bars at least 5/8 inch in diameter or equivalent, spaced no more than 10 inches apart, permanently and securely fastened in place; and

(b) By metal-sash windows having solid section steel muntins of no less than 1/8 inch thickness, spaced no more than 8 inches apart.

(3) Exterior hoistway windows must be identified with 4-inch high letters marked "elevator."

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23111, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23113 What are the requirements for pipes in hoistways that convey gases, vapors, or liquids?**

(1) All steam and hot water pipes in a hoistway must be covered to prevent direct spray onto the elevator car if ruptured, as

required in ASME A17.1, Rule 102.2.

(2) All other pipes or ducts currently in a hoistway must be securely fastened to prevent excessive vibration.

(3) Future pipes or ducts must not be installed in a hoistway unless they directly pertain to the elevator's operation.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23113, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23115 Access to overhead sheaves.** The current language under WAC 296-96-23115 applies. See <https://app.leg.wa.gov/WAC/default.aspx?cite=296-96-23115>.

**WAC 296-96-23116 Car numbers.** The current language under WAC 296-96-23116 applies. See <https://app.leg.wa.gov/WAC/default.aspx?cite=296-96-23116>.

**WAC 296-96-23117 Car top guard railings.** The current language under WAC 296-96-23117 applies. See <https://app.leg.wa.gov/WAC/default.aspx?cite=296-96-23117>.

**WAC 296-96-23119 Low overhead signs.** The current language under WAC 296-96-23119 applies. See <https://app.leg.wa.gov/WAC/default.aspx?cite=296-96-23119>.

## Section 2

### Machine Rooms and Machinery Spaces

**WAC 296-96-23121 What are the requirements for machine room and machinery space access?** Access doors to machine rooms and machinery spaces must be kept closed and locked. The lock must be a spring type which is installed to permit the door to be opened from the inside without a key.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23121, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23122 Machine room and machinery space illumination.** The current language under WAC 296-96-23122 applies. See <https://app.leg.wa.gov/WAC/default.aspx?cite=296-96-23122>.

**WAC 296-96-23123 Duplex and simplex receptacles.** The current language under WAC 296-96-23123 applies. See <https://app.leg.wa.gov/WAC/default.aspx?cite=296-96-23123>.

**WAC 296-96-23124 What installation requirements apply to pipes conveying gases, vapors, or liquids in machine rooms and machinery spaces?** (1) All pipes or ducts currently in machine rooms and machinery spaces must be securely fastened to prevent excessive vibration.

(2) Future pipes or ducts must not be installed in machine rooms and machinery spaces.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23124, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23125 Must elevator machines and control equipment be protected from the weather?** Eleva-

tor machines and control equipment must be protected from the weather.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23125, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23126 Guarding of equipment.** The current language under WAC 296-96-23126 applies. See <https://app.leg.wa.gov/WAC/default.aspx?cite=296-96-23126>.

**WAC 296-96-23130 What requirements apply to pit access?** ~~(1) Pits must be accessible to all authorized personnel.~~

(2) Access doors, if provided, must be kept closed and locked.

(3) Access ladders must be installed in elevator pits 3 feet or deeper.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23130, filed 12/22/00, effective 1/22/01.]

## Section 3 Pits

**WAC 296-96-23131 What requirements apply to pit drains?** (1) Pit drains directly connected to sewers are prohibited.

(2) Sumps, with or without pumps, are permitted.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23131, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23132 Pit illumination and receptacles.** The current language under WAC 296-96-23132 applies. See <https://app.leg.wa.gov/WAC/default.aspx?cite=296-96-23132>.

**WAC 296-96-23133 What requirements apply to counterweight pit guards?** (1) Where feasible, unperforated metal guards must be installed in the pit on the open side or sides on all counterweights where spring or solid-type buffers are used or where oil buffers attached to the counterweights are used. Except, where compensating chairs or ropes are attached to the counterweight the guard may be omitted on the side facing the car to which the chains or ropes are attached.

(2) Guards must extend from a point no more than 12 inches above the pit floor to a point at least 7 feet but not more than 8 feet above the floor; and be fastened to a properly reinforced and braced metal frame that is at least equal in strength and stiffness to No. 14 U.S. gauge sheet steel.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23133, filed 12/22/00, effective 1/22/01.]

## Section 4

### Protection of Space Below Hoistways

**WAC 296-96-23140 What requirements apply to any space below a hoistway that is not permanently protected**

**from access?** When space below a hoistway is not permanently protected from access, the following requirements apply:

- (1) Counterweights must be equipped with safeties.
- (2) The cars and counterweight must be equipped with spring or oil buffers.
- (3) The car and counterweight buffer supports must be sufficiently strong to withstand without permanent deformation contact with buffers traveling at the following speeds:
  - (a) The governor tripping speed where the safety is governor operated; or
  - (b) 125 percent of the rated speed when the safety is not operated by a governor.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23140, filed 12/22/00, effective 1/22/01.]

## **Section 5 Hoistway Entrances**

**WAC 296-96-23150 Are hoistway doors (gates) required?** (1) Passenger elevators. Hoistway landing openings must have entrances which guard the full width and height of the openings. The panels of entrances used with automatic-operation passenger elevators must not have hand latches or other hand operated door fastening devices, nor must such panels

(2) Freight elevators. Hoistway landing openings for freight elevators must have entrances which guard the full width of the opening. Gates and doors must meet the following requirements:

(a) Balanced type vertically sliding hoistway gates must extend from a point not more than 2 inches from the landing threshold to a point at least 66 inches above the threshold.

(b) Gates must be solid or openwork of a design that will reject a 2 inch diameter ball and be located so that the distance from the hoistway face of the gate to the hoistway edge of the landing sill is no more than 2 1/2 inches.

(c) Gates must be constructed of metal or wood and be designed and guided so as to withstand a lateral pressure of 100 pounds applied at approximately the center without breaking or becoming permanently deformed and without displacing the gate from its guides or tracks.

(d) At the top landing, a gate 66 inches high may be used if there is not sufficient clearance for a 6 feet high gate. When the requirements of WAC 296-96-23110 allow nonfire-resistant hoistway enclosures, a gate may be used.

(e) Gates must be constructed of either metal or wood.

(f) Gates must withstand a lateral pressure of 100 pounds, applied at approximately their center, without breaking, being permanently deformed or being displaced from their guides or tracks.

(g) The maximum vertical opening between a landing sill and a door or gate is 2 inches.

(h) The distance between the gate's hoistway face and the hoistway landing edge must not exceed 2 1/2 inches.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23150, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23151 What requirements apply to hoistway door closing devices?** (1) Horizontally sliding doors on automatic-operation elevators must be equipped with door closers that automatically close an open door if the car for any reason leaves the landing zone.

(2) Horizontal swinging single or center-opening doors on automatic-operation elevators must be self-closing.

(3) Door closers are not required for the swinging portion of combination horizontally sliding and swinging doors.

(4) On center-opening doors that utilize relating cables if the cabling fails or when the cabling is replaced a method shall be provided to ensure that both doors automatically close if the car for any reason leaves the landing zone.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. WSR 04-12-047, § 296-96-23151, filed 5/28/04, effective 6/30/04. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23151, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23152 What requirements apply to hoistway door vision panels?** (1) Manually operated or self-closing hoistway doors of the vertically or horizontally sliding type for elevators with automatic or continuous-pressure operation must be provided with a vision panel except at landings of automatic-operation elevators where a hall position indicator is provided.

(2) In multisection doors, the vision panel is required in one section only but may be placed in all sections.

(3) All horizontally swing doors must have vision panels.

(4) Vision panels may be provided in any type of hoistway door regardless of the type of operation of the elevator. Where provided, vision panels must meet the following requirements:

(a) The area of any single vision panel must be at least 25 square inches with the total area of one or more panels in any hoistway door not exceeding 80 square inches.

(b) Each clear panel opening must reject a 6 inch diameter ball.

(c) Muntins between panel sections must be made of a noncombustible material and of substantial construction. If located on the landing side, they must be flush with the surface of the landing side of the door.

(d) Panel openings must be glazed with clear wire glass at least 1/4 inch thick.

(e) A panel's center must be located at least 54 inches but no more than 66 inches above the landing except, for vertically sliding, biparting, counterbalanced doors it must be located to conform with the dimensions specified to the extent that the door design will permit.

(f) Vision panels in horizontally swing doors must be located for convenient vision when opening the door from the car side.

(g) Wire-glass panels in power-operated doors must be substantially flush with the surface of the landing side of the door.

(h) Vision panel frames must be secured by means of nonreversible screws or other tamper proof fasteners.

(i) Vision panels which do not meet the requirements of (a) through (h) of this section must be protected by protective grilles made of No. 15 gauge stainless or galvanized steel in accordance with the following specifications:

(i) Grilles must be sized to fit within or over the vision panel frame and completely cover the vision panel opening in the hoistway door.

(ii) Grilles must be secured by means of nonreversible screws or other tamper proof fasteners.

(iii) Grilles must contain openings which are no larger than 3 inches by 3/4 inch, or 3 inches in diameter.

(iv) All edges must be beveled and free of burrs.

(v) Grilles must be installed on the hoistway side of the door.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23152, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23153 What requirements apply to door hangers for horizontal slide doors?** Door hangers for horizontal slide type entrances must meet the following requirements:

(1) Means must be provided to prevent the hangers from jumping the track.

(2) Stops must be provided in the entrance assembly to prevent hangers from overrunning the end of the track.

(3) Power-operated doors must be built to withstand, without damage or appreciable deflection, an imposed static load equal to four times the weight of each panel. This static load must be applied successively downward and upward along the vertical centerline of the panel.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23153, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23154 Are astragals required?** On a vertically sliding, biparting, counterbalanced hoistway door, a fire-resistive, nonshearing and noncrushing member of either the meeting or overlapping type must be provided on the upper panel to close the distance between the rigid door sections when in contact with the stops. Rigid members which overlap the meeting edge and center-latching devices are prohibited.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23154, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23155 What requirements apply to pull straps?** Manually operated, vertical slide, biparting elevators doors which can be operated from the landings must be provided with pull straps on the inside and outside of the upper panel where the lower edge of the upper panel is more than 6 feet 6 inches above the landing when the panel is in the fully open position. The length of the pull straps must be as follows:

(1) The bottom of the strap must be not more than 6 feet 6 inches above the landing when the panel is in the fully opened position.

(2) The length of the strap must not be extended by means of ropes or other materials.

(3) Where pull straps are provided on the car side of doors of elevators which can be operated from the car only, the length of the pull straps must conform to the requirements specified in (1) and (2) of this section.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23155, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23156 What requirements apply to landing sill clearances?** The clearance between the car-platform sill and the hoistway edge of any landing sill, or the hoistway side of any vertically sliding counterweighted, or of any vertically sliding counterbalanced biparting hoistway door, must be:

(1) At least 1/2 inch where side car guides are used.

(2) At least 3/4 inch where corner car guides are used.

(3) In all cases, the maximum clearance must not be more than 1 1/2 inch.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23156, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23157 What is the maximum allowable threshold clearance?** The maximum distance from the hoistway door or gate face to the hoistway edge of the threshold must not exceed 2 1/4 inches.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23157, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23158 Identification of floors.** The current language under WAC 296-96-23158 applies. See <https://app.leg.wa.gov/WAC/default.aspx?cite=296-96-23158>.

## Section 6 Hoistway Door Locking Devices, Parking Devices, and Access

**WAC 296-96-23160 What requirements apply to hoistway door (gate) locking devices?** (1) Passenger elevator hoistway doors or gates must be equipped with hoistway-unit system door interlocks.

(2) Freight elevator hoistway doors or gates must be equipped with hoistway-unit system door interlocks or an approved type combination electric contact and mechanical lock.

(3) Combination locks and electric contacts or interlocks must be located so not to be accessible from the landing side when the hoistway doors or gates are closed.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23160, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23161 What requirements apply to elevator parking devices?** (1) Elevators that are operated from within the car only must have elevator parking devices



installed at every landing that is equipped with an unlocking device.

(2) On elevators that are not operated from within the car only, a parking device must be provided at one landing and may be provided at other landings. This device must be located at a height no greater than 6 feet 11 inches above the floor.

(3) Parking devices are not required for elevators with hoistway doors that automatically unlock when the car is within the landing zone.

(4) Parking devices must conform to the following specifications:

(a) They must be mechanically or electrically operated.

(b) They must 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.

(c) Where springs are used, they must be of the restrained compression type which will prevent separation of the parts in case a spring breaks.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23161, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23162 What requirements apply to hoistway door unlocking devices?** Hoistway door unlocking devices or hoistway access switches must be provided on all elevators at one upper landing to permit access to the top of the car and at the lowest landing if this landing is the normal point of access to the pit. Hoistway door unlocking devices may be provided at all landings for emergency use.

(1) Hoistway door unlocking devices must conform to the following specifications:

(a) The device must unlock and permit the opening of the hoistway door from the access landing regardless of the position of the car.

(b) The device must be designed to prevent unlocking the door with common tools.

(c) The operating means for unlocking the door must be available to and used only by inspectors, elevator maintenance and repair personnel, and qualified emergency personnel.

(d) The unlocking-device keyway must be located at a height no greater than 6 feet 11 inches above the floor.

(2) Hoistway access switches must conform to the following specifications:

(a) The switch must be installed only at the access landings.

(b) The switch must be installed adjacent to the hoistway entrance at the access landing with which it is identified.

(c) The switch must be of the continuous-pressure spring-return type and must be operated by a cylinder-type lock having not less than five-pin or five-disk combination with the key removable only when the switch is in the "off" position. The lock must not be operable by any key which will operate locks or devices used for other purposes in the building. The key or combination must be available to and used only by inspectors and elevator maintenance and

repair personnel.

(d) The operation of the switch at either access landing must permit and may initiate and maintain movement of the car with the hoistway door at this landing unlocked or not in the closed position, and with the car door or gate not in the closed position, subject to the following:

(i) The operation of the switch must not render ineffective the hoistway door interlock or electric contact at any other landing.

(ii) The car must not be operated at a speed greater than 150 feet per minute.

(iii) For automatic and continuous-pressure operation elevators: Landing operating devices of continuous-pressure operation elevators and car and landing operating devices of automatic operation elevators must first be made inoperative by means other than the access switch; and power operation of the hoistway door and/or car door or gate is inoperative.

(iv) Automatic operation by a car-leveling device is inoperative.

(v) The top-of-car operating device is inoperative.

(vi) The movement of the car initiated and maintained by the upper access switch must be limited in the down direction to a travel not greater than the height of the car crosshead above the car platform, and limited in the up direction above the upper access landing to the distance the car apron extends below the car platform. Where electrically operated switches, relays, or contractors are used to render inoperative the hoistway-door interlock or electric contact or the car door or gate electric contact, the control circuits must be arranged to conform to the requirements of WAC 296-96-23221 and in addition, to render the normal car and hall operation ineffective in any such switch, relay, or contractor fails to function in the intended manner.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23162, filed 12/22/00, effective 1/22/01.]

## Section 7 Power Operation of Doors and Gates

**WAC 296-96-23165 What requirements apply to reopening devices for power-operated car doors and gates?** (1) A power-operated car door or gate must have a reopening device that stops and reopens the door or gate and the adjacent hoistway door if the car door or gate is obstructed while closing. If the closing kinetic energy is reduced to 2 1/2 feet-lbf or less, the reopening device may be rendered inoperative.

(2) For center opening doors or gates, the reopening device must be designed and installed so that obstruction of either door or gate panel when closing will cause the reopening device to function.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23165, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23166 What requirements apply to photo electric or electric eye door reopening devices?** An elevator equipped with a photo electric or electric eye device for reopening of the car and hoistway doors must be provided

with a means that will automatically time-out and close the door if it has been obstructed for 20 seconds. The photo electric or electric eye device must not be reactivated until the doors have fully closed. There are two exceptions to this requirement:

(1) The department may authorize hospitals or nursing homes to allow obstructed doors to close within 35 seconds after the expiration of the normal door open time.

(2) When smoke detectors are used to bypass photo electric or electric eye devices the doors are not required to time-out and close except under phase I conditions as authorized by ANSI A17.1-211.3A.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23166, filed 12/22/00, effective 1/22/01.]

## **Subpart II**

### **Machinery and Equipment for Electric Elevators**

**WAC 296-96-23200, Scope.** The current language under WAC 296-96-23200 applies. See <https://app.leg.wa.gov/WAC/default.aspx?cite=296-96-23200>.

#### **Section 1**

##### **Buffers and Bumpers**

**WAC 296-96-23203 What requirements apply to buffers and bumpers?** Car and counterweight buffers or bumpers must be provided. Solid bumpers may be used in lieu of buffers where:

- (1) The rated speed is 50 feet per minute or less; or
- (2) Type C safeties are used.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23203, filed 12/22/00, effective 1/22/01.]

#### **Section 2**

##### **Counterweights**

**WAC 296-96-23205 What requirements apply to counterweights?** On rod type counterweights, the rod nuts must be cotter-pinned and the tie rods must be protected so that the head weight cannot crush the tie rods on buffer engagement.

(1) The weights must be protected so that they cannot be dislodged.

(2) Compensating chains or ropes must be fastened to the counterweight from directly or to a bracket fastened to the frame and must not be fastened to the tie rods.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23205, filed 12/22/00, effective 1/22/01.]

#### **Section 3**

##### **Car Frames and Platforms**

**WAC 296-96-23206 What requirements apply to car platforms and frames?** Every elevator car must have a platform consisting of a nonperforated floor attached to a plat-

form frame supported by the car frame and extending over the entire area within the car enclosure.

(1) Holes in the floor for the safety plank wrench, etc., must be covered and secured.

(2) The platform frame members and the floor must be designed to withstand the forces developed under the loading conditions for which the elevator is designed and installed.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23206, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23207 What requirements apply to platform guards (aprons)?** The entrance side of the platform of passenger and freight elevators equipped with leveling devices or truck-zoning devices must have smooth metal guard plates of not less than 0.0598 inch thick steel, or material of equivalent strength and stiffness, adequately reinforced and braced to the car platform and conforming to the following:

(1) The guard plate must extend no less than the full width of the widest hoistway door opening.

(2) It must have a straight vertical face, extending below the floor surface of the platform, of no less than the depth of the leveling of truck zone, plus 3 inches.

(3) If new guards are installed, the lower portion of the guard must be bent back at an angle of not less than 60 degrees nor more than 75 degrees from the horizontal.

(4) The guard plate must be securely braced and fastened in place to withstand a constant force of not less than 15-lbf applied at right angles to and at any position on its face without permanent deformation.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23207, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23208 What requirements apply to hinged platform sills?** Hinged platform sills, where provided, must have electric contacts which will prevent operation of the elevator by the normal operating device unless the hinged sill is within 2 inches of its fully retracted position. The elevator may be operated by the leveling device in the leveling zone with the sill in any position.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23208, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23209 What requirements apply to floating (movable) platforms?** Floating (movable) platforms which permit operation of the elevator when the car door or gate is not in the closed position are prohibited.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23209, filed 12/22/00, effective 1/22/01.]

#### **Section 4 Car**

##### **Enclosures**

**WAC 296-96-23215 What requirements apply to car enclosures?** Car enclosures for freight and passenger cars must meet the following specifications:

(1) Freight elevator cars:

(a) Cars must be enclosed to a height of at least 6 feet from the floor on the sides where there are no hoistway doors or gates with solid panel or openwork which will reject a 2 inch diameter ball.

(b) On the side of the car adjacent to the counterweight runway and extending 6 inches each side of the counterweight runway, the enclosure must extend to the car top or underside of car crosshead.

(c) If overhead protection is of openwork material, it must reject a 1 1/2 inch ball and shall be sufficiently strong to support 300 pounds applied at any point. Simultaneous application of these loads is not required.

(d) Suitable overhead protection may be installed directly over the area where the operator runs the controls, providing the overhead protection covers sufficient area for safe protection of the operator.

(2) Passenger elevator cars:

(a) Passenger elevator cars must be fully enclosed on all sides and the top, except the opening for entrances

(b) Enclosures must be of metal or wood in conformity with the local fire regulations.

(c) The car top must be sufficiently strong to support a load of 300 pounds applied at any point. Simultaneous application of these loads is not required.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23215, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23216 What requirements apply to the lining materials used on passenger car enclosures?** Materials used for passenger car linings must meet the following specifications:

(1) Carpeting without padding may be used for interior finishes provided that it has a Class I rating, a flame spread of 25 or less which must include all assembly components except the adhesive. The adhesive must be a slow-burning type.

(2) Slow-burning combustible materials, other than carpet, may be used for interior finishes provided the materials have a Class II rating or better (flame spread of 75 or less), which must include all assembly components other than the adhesive. Materials must be firmly bonded flat to the enclosure and must not be padded. Fabric with spray-type fireproofing must not be installed in elevators.

(a) Equivalent ratings in watts per centimeter squared as derived in the radiant panel test are also acceptable.

(b) .45 watts/cm squared or higher is equivalent to Class I or better.

(c) .22 watts/cm squared or higher is equivalent to Class II or better.

(d) In the radiant test, the higher the number the better the flame resistance.

(e) In the Class I and II system, the lower the number, the better the flame resistance.

(f) Smoke density of materials must be less than 450 when tested in accordance with UBC Standard No. 42.-1.

(3) Certification that the materials and assembly meet these requirements must be submitted to the building official.

**Note:** These specifications do not apply to new or alteration permits (see ASME code for requirements).

[Statutory Authority: Chapter 70.87 RCW. WSR 13-24-066, § 296-96-23216, filed 11/27/13, effective 1/1/14. Statutory Authority: RCW 70.87.-020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23216, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23220 What requirements apply to car doors and gates?** Car doors or gates are required at each entrance to the elevator car.

(1) Car doors or gates may be horizontal or vertical sliding.

(2) Gates, except collapsible, may be solid or may be openwork of a design to reject a 2 inch diameter ball. Gates must be:

(a) Constructed of metal or wood; and

(b) Designed so as to withstand a lateral pressure of 100 pounds applied at approximately the center without breaking or being permanently deformed and without displacing the gate from its guides or tracks.

(3) Collapsible gates must reject a 3 inch diameter ball when fully closed (extended position) when installed on passenger cars and must reject a 4 1/2 inch ball when fully extended when installed on freight cars. Such gates must not be power-opened for more than one-third of their clear opening distance or for a maximum power opening distance not to exceed 10 inches. Collapsible gates must have at least every fourth vertical member guided at the top and every second vertical member guided at the bottom.

(4) Handles of manually operated collapsible gates nearest the car operating device on elevators operated from the car only must be located so that the nearest handle is not more than 48 inches from the car operating device when the gate is closed and not more than 48 inches above the car floor. Gate handles must be provided with finger guard.

(5) Car doors and gates when in the fully closed position must meet the following specifications:

(a) For passenger cars, they must protect the full width and height of the car entrance opening provided that vertically sliding gates may extend from a point not more than 1 inch above the car floor to a point not less than 6 feet above the floor.

(b) For freight elevators, they must protect the full width of the car entrance opening. Car doors must extend from the car floor to a height of not less than 6 feet above the car floor. Vertically sliding gates must extend from a point not more than 1 inch above the car floor to a point not less than 6 feet above the car floor.

(6) Car doors and gates of electric and electro-hydraulic elevators must be equipped with approved car door or gate electric contacts which will prevent operation of the elevator by the normal operating device unless the car door or gate is in the closed position.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23220, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23221 What requirements apply to the location of car doors and gates?** This section does not apply to freight elevators with horizontally swinging doors that are



inaccessible to the general public and located in factories, warehouses, garages, and other similar buildings. All other elevators must meet the following requirements:

(1) Doors or gates for automatic or continuous-pressure operation elevators must be located so that the distance from the face of the car door or gate to the face of the hoistway door is no more than the following:

(a) Where a swinging-type hoistway door and a car gate are used, 4 inches.

(b) Where a swinging-type hoistway door and a car door are used, 5 1/2 inches.

(c) Where a sliding-type hoistway door and a car gate or door are used, 5 1/2 inches.

(2) The distances specified must be measured as follows:

(a) Where a multisection car door and a multisection hoistway door are used or where one of these doors is multi-section and the other is single section, between the sections of the car door and the hoistway doors nearest to each other.

(b) Where a multisection car door and a swinging-type hoistway door are used, between the hoistway door and the section of the car door farthest from it. Where space conditions require the use of three-speed car doors, the distance must be measured from the intermediate speed panel.

(c) Where a car gate is used, between the car gate and the section of the hoistway door nearest to the car gate.

(3) Where existing distances are greater than specified by paragraphs (1) and (2) of this section, a space guard of sheet metal must be provided, attached to the hoistway door and/or car door.

(a) The guard is to be mounted to the door by a tamper-proof means.

(b) The bottom of the guard must be no less than 1/8 inch nor more than 1/2 inch from the edge of the sill and must be no more than 1/2 inch above the sill.

(c) The face of the guard must run vertically no less than 40 inches nor more than the height of the lower edge of the vision panel.

(d) The guard must extend the full width of the door.

(e) The top of the guard must be inclined toward the face of the door at an angle of no less than 60 degrees nor more than 75 degrees from the horizontal.

(f) Exposed edges must be beveled or rolled to eliminate sharp edges.

(g) The guard must be sufficiently rigid or reinforced to prevent collapsing or denting.

(h) Mounting of the guard must have proper clearances at the bottom and sides to permit easy closing of the door and must not interfere with the self-closing.

(i) On multisection horizontally sliding doors only, the leading or fast panel must be fitted with the space guard. For swinging doors, the sides of the guard must be closed if the depth exceeds 5 inches.

(4) On horizontally-sliding doors where existing clearances are greater than specified by subsections (1) and (2) of this section, a vertical sight guard must be mounted to the leading edge of the hoistway door. The sight guard must:

(a) Be mounted with a vertical clearance of no more than 1/2 inch to this sill to a height of no less than 6 feet; and

(b) Project from the door, a distance of no more than 1/2 inch nor less than 1/8 inch from the hoistway edge of the sill.

(5) Only the following devices may be used to render inoperative hoistway door interlocks, the electric contacts of hoistway door combination mechanical locks and electric contacts, or car door or gate electric contacts:

(a) Leveling devices.

(b) Truck-zoning devices.

(c) Hoistway access switch.

(d) Existing devices which do not conform to the above must be removed.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23221, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23222 What control requirements apply to operating circuits?** The failure of any single magnetically operated switch, contractor, or relay to release in the intended manner, or the occurrence of a single accidental ground, must not permit the car to start or run if any hoistway door interlock is unlocked or if any hoistway door or car door or gate electric contact is not in the closed position.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23222, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23225 What requirements apply to car emergency exits?** (1) Top emergency exits:

(a) Top emergency exit covers must be hinged or otherwise attached to the car top so that the cover can be opened from the top of the car only and opens outward.

(b) The exit cover of the lower compartment of a multideck elevator car must be openable from either compartment.

(2) Side emergency exits:

(a) Side emergency exit doors or panels, where provided, must have a lock arranged so that the door may be opened from the inside of the car only by a special shaped removable key and outside the car by means of a nonremovable handle.

(b) Side emergency car exit door panels must open only into the car.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23225, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23226 What requirements apply to car lighting?** (1) Car interiors must be equipped with at least 2 electric lights.

(2) Minimum illumination at the car threshold, with the door closed, must be at least:

(a) 5 foot candle (54 lx) for passenger elevators; and

(b) 2 1/2 foot candle (27 lx) for freight elevators.

(3) The department does not require light control switches, however, if installed they must be located in or adjacent to the car's onboard operating device.

(4) In automatic elevators, the light control switch must be either a key-operated type or located in a fixture with a locked cover.

(5) Light fixtures mounted on car tops must be equipped with a nonkey operated switch located in or adjacent to the

fixture.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23226, filed 12/22/00, effective 1/22/01.]

## Section 5 Safeties

**WAC 296-96-23227 What requirements apply to car safeties?** Every elevator car suspended by wire ropes must be equipped with safeties. The safety device must be capable of stopping and sustaining the entire car with its rated load in the event of cable severance or overspeed. There must be a switch on the car activated by the setting of the safeties that will stop electric power from the driving machine motor and brake. Car safeties are identified and classified on the basis of performance characteristics after the safety begins to apply pressure on the guide rails.

(1) Type A safeties:

(a) Develop a rapidly increasing pressure on the guide rails during the stopping interval, the stopping distance being very short due to the inherent design of the safety.

(b) Operating force is derived entirely from the mass and the motion of the car or the counterweight being stopped.

(c) Apply pressure on the guide rails through eccentrics, rollers, or similar devices without any flexible medium purposely introduced to limit the retarding force and increase the stopping distance.

(2) Type B safeties:

(a) Apply limited pressure on the guide rails during the stopping interval and provide stopping distances that are related to the mass being stopped and the speed at which application of the safety is initiated.

(b) Retarding forces are reasonably uniform after the safety is fully applied.

(c) Continuous tension in the governor rope may or may not be required to operate the safety during the entire stopping interval.

(d) Minimum and maximum distances are specified on the basis of governor tripping speed.

(3) Type C safeties (Type A with oil buffers):

(a) Develop retarding forces during the compression stroke of one or more oil buffers interposed between the lower members of the car frame and a governor-operated Type A auxiliary safety plank applied on the guide rails.

(b) The stopping distance is equal to the effective stroke of the buffers.

(4) Type G safeties:

(a) Are similar to Type B except for having a gradually increasing retarding force.

(b) May be either of the wedge clamp type or the flexible guide clamp type applied by a cable which unwinds a drum below the car floor.

(5) Slack rope safeties:

(a) Are actuated by the slackening or breaking of the hoisting ropes.

(b) Are not actuated by an overspeed governor.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23227, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23228 What is the maximum amount of governor rope movement allowed when operating a safety mechanism?** For all Type B safeties, the movement of the governor rope relative to the car or the counterweight, respectively, required to operate the safety mechanism from its fully retracted position to a position where the safety jaws begin to exert pressure against the guide rails must not exceed the following values based on rated speed:

(1) For car safeties:

(a) 200 feet per minute or less: 42 inches.

(b) 201 to 375 feet per minute: 36 inches.

(c) Over 375 feet per minute: 30 inches.

(2) For counterweight safeties: 42 inches for all speeds.

(3) Drum operated car and counterweight safeties requiring continual unwinding of the safety drum rope to fully apply the safety, must be designed so that no less than three turns of the safety rope will remain on the drum after the overspeed test of the safety has been made with rated load in the car.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23228, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23229 What requirements apply to rail lubricants and lubrication plates?** Rail lubricants or coating which will reduce the holding power of the safety or prevent its functioning as required must not be used.

(1) A metal plate must be securely attached to the car crosshead in an easily visible location and, where lubricants are to be used, must carry the notation, "Consult manufacturer of the safety for the characteristics of the rail lubricant to be used." If lubricants are not to be used, it should be stated so on the plate.

(2) If lubricants other than those recommended by the manufacturer are used, a safety test should be done to demonstrate that the safety will function as required.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23229, filed 12/22/00, effective 1/22/01.]

## Section 6 Speed Governors

**WAC 296-96-23235 What requirements apply to speed governors?** A speed governor or inertia trip safety or a slack cable must be installed on all elevators and must be designed so that it will activate the car safeties before the car attains a speed of 140 percent of the rated speed. Governor ropes must be at least 3/8 inch in diameter, if iron or steel rope, and at least 3/4 inch, if manila rope. Tiller rope must not be used.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23235, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23236 What requirements apply to speed governor overspeed and car safety mechanism switches?** (1) A switch must be provided on the speed governor and operated by the overspeed action of the governor when used with Type B and C car safeties of elevators having a rated speed exceeding 150 feet per minute.

(2) A switch must be provided on the speed governor when used with a counterweight safety for any car speed.

(3) For static control, an overspeed switch must be provided regardless of rated speed and it must operate in both directions of travel.

(4) These switches must, when operated, remove power from the driving-machine motor and brake before or at the time of application of the safety.

(5) Switches used to perform the function specified must be positively opened and remain open until manually reset.

(6) Switches operated by the car safety mechanism must be of a type which will not reset unless the car safety mechanism has been returned to the "off" position.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23236, filed 12/22/00, effective 1/22/01.]

## Section 7 Capacity and Loading

**WAC 296-96-23240 What is the minimum rated load for passenger elevators?** The rated load in pounds for passenger elevators must be based on the inside net platform areas and must be not less than shown in the table below. The inside net platform areas must be determined as shown in the table below which shows the maximum inside net platform areas for the various common rated loads. If other rated loads are used, they must be at least the following:

(1) For an elevator with an inside net platform area of no more than 50 feet squared,  $W = 0.667A \text{ squared} + 66.7A$ .

(2) For an elevator with an inside net platform area of more than 50 feet squared,  $W = 0.0467A \text{ squared} + 125A - 1367$ .

NOTE: A = inside net platform area, ft. squared  
W = minimum rated load, lb.

MAXIMUM* INSIDE NET PLATFORM AREAS FOR THE VARIOUS RATED LOADS			
Rated Load, lb.	Inside Net Platform Area, ft <sup>2</sup>	Rated Load, lb.	Inside Net Platform Area, ft <sup>2</sup>
500	7.0	5,000	50.0
600	8.3	6,000	57.7

700	9.6	7,000	65.3
1,000	13.25	8,000	72.9
1,200	15.6	9,000	80.5
1,500	18.9	10,000	88.0
1,800	22.1	12,000	103.0
2,000	24.2	15,000	125.1
2,500	29.1	18,000	146.9
3,000	33.7	20,000	161.2
3,500	38.0	25,000	196.5
4,000	42.2	30,000	231.0
4,500	46.2		

\*To allow for variations in cab designs, an increase in the maximum inside net platform area not exceeding 5% will be permitted for the various rated loads.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. WSR 04-12-047, § 296-96-23240, filed 5/28/04, effective 6/30/04. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23240, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23241 What requirements apply to the use of partitions that reduce inside net platform area?** When partitions are used in elevator cars to restrict net platform area for passenger use, they must be permanently fastened in place.

(1) Gates, doors, or handrails must not be used as partitions.

(2) Partitions must be installed to permit approximately symmetrical loading.

(3) When conditions do not permit symmetrical loading, guide rails, car frames, and platforms must be capable of sustaining the resulting stresses and deflections.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23241, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23243 What is the minimum rated load for freight elevators?** The minimum rated load for freight elevators in pounds must be based on the weight and class of the load to be handled but must in no case be less than the minimum specified in this section for each class of loading based on the inside net platform area. Freight elevators must be designed for one of the following classes of loading:

(1) Class A - General freight loading: Where the load is distributed, the weight of any single piece of freight or of any single hand truck and its load is not more than one-quarter the rated load of the elevator, and the load is handled on and off the car platform manually or by means of hand trucks. For this class of loading, the rated load must be based on not less than 50 lb./ft. squared of inside net platform area.

(2) Class B - Motor vehicle loading: Where the elevator is used solely to carry automobile trucks or passenger automobiles up to the rated load of the elevator. For this class of loading, the rated load must be based on not less than 30 lb./ft. squared of inside net platform area.

(3) Class C - Industrial truck loading: Where the load is carried in transit or is handled on and off the car platform by means of power industrial trucks or by hand trucks having a

loaded weight more than one-quarter the rated load of the elevator. For this class of loading the following requirements apply:

- (a) The rated load must be based on not less than 50 lb./ft. squared of inside net platform area;
- (b) The weight of the loaded industrial truck must not exceed the rated load of the elevator;
- (c) The weight of the loaded industrial truck plus any other material carried on the elevator must not exceed the rated load when the industrial truck is also carried;
- (d) During loading and unloading, the load on the elevator must in no case exceed 150 percent of the rated load, and where this load exceeds the rated load, the capacity of the brake and the traction relation must be adequate to safely sustain and level at least 150 percent of the rated load.

NOTE: When the entire rated load is placed on the elevator by the industrial truck in increments, the load imposed the car platform while the last increment is being loaded or the first increment unloaded will exceed the rated load by the weight of the empty industrial truck.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23243, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23244 What requirements apply to capacity plates?** (1) Every elevator must be equipped with a capacity plate or a painted sign that is permanently and securely fastened in place and located in a conspicuous position inside the car. It must indicated the rated load of the elevator in pounds, and for freight elevators, this plate or sign must indicate:

- (a) The capacity for lifting one-piece loads;
  - (b) For freight elevators used for industrial truck loading where the truck is not usually carried by the elevator but used only for loading and unloading, the maximum load the elevator is designed to support while being loaded or unloaded.
- (2) Capacity plates must be durable and readily legible. The height of the letters and figures must be at least 1/4 inch for passenger elevators and 1 inch for freight elevators.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23244, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23245 What requirements apply to signs on freight elevators?** In addition to the capacity plate or painted sign required by WAC 296-96-23244, two other signs must be installed or painted inside the car in a conspicuous place and permanently and securely fastened to the car enclosure. They must be durable and easily read with 1/2 inch letters, as follows:

- (1) In elevators not permitted to carry passengers, the sign must read "This is not a passenger elevator; no persons other than the operator and freight handlers are permitted to ride on this elevator."
- (2) In elevators permitted to carry employees, the sign must read "No passengers except employees permitted."

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23245, filed

12/22/00, effective 1/22/01.]

## Section 8

### Driving Machines and Sheaves

**WAC 296-96-23250 What general requirements apply to driving machines and sheaves?** (1) Sheaves and drums must be made of cast iron or steel and must have finished grooves for ropes.

- (2) Set screws fastenings must not be used in lieu of keys or pins on connections subject to torque or tension.

- (3) Friction gearing or a clutch mechanism must not be used to connect a driving-machine drum or sheave to the main driving mechanism, other than in connection with a car leveling device.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23250, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23255 What requirements apply to winding drum machines?** (1) Winding drum machines must be equipped with a slack-rope device with an enclosed switch of the manually reset type which must cause the electric power to be removed from the elevator driving machine motor and brake if the hoisting ropes become slack or broken.

- (2) Winding drum machines must be equipped with adjustable machine automatic terminal stop mechanisms set to directly open the main line circuit to the driving machine motor and brake coincident with the opening of the final terminal stopping switch. Chain, belt, or rope-driven mechanisms must not be used.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23255, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23256 What requirements apply to indirect-drive machines?** (1) Indirect-drive machines, utilizing V belts, tooth drive belts, or chain drives, must have at least three belts or chains operating together in parallel as a set. Belt and chain drive sets must be pre-loaded and matched for length.

- (2) Belt set selection must be based upon the manufacturer's rated breaking strength and a safety factor of 10. Chain and sprocket set selection must be based upon the recommendations in the supplementary information section of ASME/ANSI B 29.1, using a service factor of 2.0. Offset links in a chain are permitted. Chain drives and belt drives must be guarded to protect against accidental contact and to prevent foreign objects from interfering with drives.

Sprockets in a chain drive set and also in a driven set must be assembled into a common hub, with teeth cut in line after assembly to assure equal load distribution on all chains. Tooth sheaves for a belt drive must be constructed in a manner to assure equal load distribution on each belt in the set.

Load determination for both the belt and chain sets must be based on the maximum static loading on the elevator car (full load on the car and the car at rest at a position in the hoistway which creates the greatest load, including either the

car or counterweight resting on its buffer).

(3) Each belt or chain in a set must be continuously monitored by a broken belt or chain device of the manually reset type which must function to automatically interrupt power to the machine and apply the brake in the event any belt or chain in the set breaks or becomes excessively slack. The driving machine brake must be located on the traction sheave or winding drum assembly side of the driving machine so as to be fully effective in the event the entire belt set or chain set should break.

(4) If one belt or chain of a set is worn, stretched, or damaged so as to require replacement, the entire set must be replaced. Sprockets and toothed sheaves must also be inspected on such occasion and be replaced if noticeably worn.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23256, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23260 What requirements apply to driving machine brakes?** The elevator driving machine must be equipped with a friction brake applied by a spring or springs, and released electrically.

The brake must be designed to have a capacity sufficient to hold the car at rest with its rated load. For passenger elevators and freight elevators permitted to carry employees, the brake must be designed to hold the car at rest with an additional load up to 25 percent in excess of the rated load.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23260, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23261 What requirements apply to the application and release of driving machine brakes?** Driving machine brakes must not be electrically released until power has been applied to the driving machine motor. All power feed lines to the brake must be opened and the brake must apply automatically when:

(1) The operating device of a car switch or continuous pressure operation elevator is in the stop position;

(2) A floor stop device functions;

(3) Any of the electrical protective devices in WAC 296-96-23272 functions;

Under conditions described in subsection (1) and (2) of this section, the application of the brake may occur on or before the completion of the slowdown and leveling operations.

The brake must not be permanently connected across the armature or field of a direct current elevator driving machine motor.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23261, filed 12/22/00, effective 1/22/01.]

## Section 9 Terminal Stopping Devices

**WAC 296-96-23262 What requirements apply to normal terminal stopping devices?** Enclosed upper and

lower normal terminal stopping devices must be provided and arranged to slow down and stop the car automatically, at or near the top and bottom terminal landings. These devices must function independently of the operation of the normal stopping means and of the final terminal stopping device.

(1) Normal stopping devices must be located on the car, in the hoistway, or in the machine room and must be operated by the movement of the car.

(2) Broken rope, tape, or chain switches must be provided in connection with normal terminal stopping devices located in the machine room of traction elevators. These switches must be opened by a failure of the rope, tape, or chain and must cause the electrical power to be removed from the driving machine motor and brake.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23262, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23264 What requirements apply to final terminal-stopping devices?** Enclosed upper and lower final terminal electro-mechanical stopping devices must be

provided and arranged to prevent movement of the car by the normal operating devices in either direction of travel after the car has passed a terminal landing. Final terminal stopping devices must be located as follows:

(1) Elevators with winding drum machines must have stopping switches on the machines and also in the hoistway operated by the movement of the car.

(2) Elevators with traction driving machines must have stopping switches in the hoistway operated by the movement of the car.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23264, filed 12/22/00, effective 1/22/01.]

## Section 10 Operating Devices and Control Equipment

**WAC 296-96-23266 What types of operating devices must not be used?** The following types of operating devices must not be used:

(1) Rope (i.e., shipper rope);

(2) Rod operating devices activated directly by hand; or

(3) Rope operating devices activated by wheels, levers, or cranks.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23266, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23268 What requirements apply to car-switch operation elevators?** The handles of lever-type operating devices of car-switch operation elevators must be arranged so that they will return to the stop position and latch there automatically when the hand of the operator is removed.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23268, filed 12/22/00, effective 1/22/01.]



**WAC 296-96-23269 What requirements apply to passenger elevator emergency stop buttons?** Passenger elevator emergency stop buttons or switches must be installed and connected so as to activate the elevator alarm when in the stop position. An optional door hold open switch may be provided, if desired, but such door hold open function must automatically cancel upon activation of a Phase I recall.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23269, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23270 What requirements apply to car top operating devices?** (1) Elevators with automatic or continuous-pressure operation must have a continuous-pressure button operating switch mounted on the car top for the purpose of operating the car solely from the top of the car. The device must operate the car at a speed not exceeding 150 feet per minute.

(2) The means for transferring the control of the elevator to the top-of-car operating device must be on the car top and located between the car crosshead and the side of the car nearest the hoistway entrance normally used for access to the car top.

(3) A top of car operating station must be installed on all existing elevators which have more than fifteen feet of travel.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. WSR 04-12-047, § 296-96-23270, filed 5/28/04, effective 6/30/04. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23270, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23272 What electrical protective devices are required?** Electrical protective devices must be installed according to the following:

(1) Slack-rope switch: Winding drum machines must be accompanied by a slack-rope device equipped with a slack-rope switch of the enclosed manually reset type which will cause the electric power to be removed from the elevator driving machine motor and brake if the suspension ropes become slack.

(2) Motor-generator running switch: Where generator-field control is used, means must be provided to prevent the application of power to the elevator driving machine motor and brake unless the motor generator set connections are properly switched for the running condition of the elevator. It is not required that the electrical connections between the elevator driving machine motor and the generator be opened in order to remove power from the elevator motor.

(3) Compensating rope sheave switch: Compensating rope sheaves must be provided with a compensating rope sheave switch or switches mechanically opened by the compensating rope sheave before it reaches its upper or lower limit of travel to cause the electric power to be removed from the elevator driving machine motor and brake.

(4) Broken rope, tape, or chain switches used in connection with machine room normal terminal stopping switches: Broken rope, tape, or chain switches which meet the requirements of WAC 296-96-23236 must be provided in connec-

tion with normal terminal stopping devices located in machine rooms of traction elevators. These switches must open when a rope, tape, or chain fails.

(5) Stop switch on top of car: A stop switch must be provided on the top of every elevator car, which must cause the electric power to be removed from the elevator driving machine motor and brake, and must:

- (a) Be of the manually operated and closed type;
- (b) Have red operating handles or buttons;
- (c) Be conspicuously and permanently marked "STOP" and indicated the stop and run positions;
- (d) Be positively opened mechanically (opening must not be solely dependent on springs).
- (e) Have red operating handles or buttons;
- (f) Be conspicuously and permanently marked "stop";
- (g) Indicate the "stop" and "run" positions; and
- (h) Be positively opened mechanically and not solely dependent on springs.

(6) Car-safety mechanism switch: A switch is required where a car safety is provided.

(7) Speed governor overspeed switch: A speed governor overspeed switch must be provided when required by WAC 296-96-23236.

(8) Final terminal stopping devices: Final terminal stopping devices must be provided on every elevator.

(9) Emergency terminal speed limiting device: Where reduced stoke oil buffers are provided, emergency terminal speed limiting devices are required.

(10) Motor generator overspeed protection: Means must be provided to cause the electric power to be removed automatically from the elevator driving machine motor and brake should a motor generator set, driven by a direct current motor, overspeed excessively.

(11) Motor field sensing means: Where direct current is supplied to an armature and shunt field of an elevator driving machine motor, a motor field current sensing means must be provided, which must cause the electric power to be removed from the motor armature and brake unless current is flowing in the shunt field of the motor.

A motor field current sensing means is not required for static control elevators provided with a device to detect an overspeed condition prior to, and independent of, the operation of the governor overspeed switch. This device must cause power to be removed from the elevator driving machine motor armature and machine brake.

(12) Buffer switches for oil buffers used with Type C car safeties: Oil level and compression switches must be provided for all oil buffers used with Type C safeties.

(13) Hoistway door interlocks or hoistway door electric contacts: Hoistway door interlocks or hoistway door electric contacts must be provided for all elevators.

(14) Car door/gate electric contacts: Car door or gate electric contacts must be provided on all elevators.

(15) Normal terminal stopping devices: Normal terminal stopping devices must be provided on every elevator.

(16) Car side emergency exit electric contact: An electric contact must be provided on every car side emergency exit door.

(17) Electric contacts for hinged car platform sills: Hinged car platform sills, where provided, must be equipped with electric contacts.

(18) Stop switch in the elevator pit: A stop switch must be installed in all elevator pits. It must be located between 36 inches to 48 inches above the bottom landing floor and accessible from outside the hoistway.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23272, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23274 What requirements apply to the power supply line disconnect?** (1) A disconnect switch or a circuit breaker must be installed and connected into the power supply line to each elevator motor or motor generator set and controller. The power supply line must be equipped with overcurrent protection inside the machine room.

(2) The disconnect switch or circuit breaker must be of the manually closed multipole type and be visible from the elevator driving machine or motor generator set. When the disconnecting means is not within sight of the driving machine, the control panel, or the motor generator set, and additional manually operated switch must be installed adjacent to the remote equipment and connected in the control circuit to prevent starting.

(3) No provision may be made to close the disconnect switch from any other part of the building.

(4) Where there is more than one driving machine in a machine room, disconnect switches or circuit breakers must be numbered to correspond to the number of the driving machine which they control.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23274, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23276 What requirements apply to phase reversal and failure protection methods?** Elevators having polyphase alternating current power supply must be equipped with a means to prevent the starting of the elevator motor if the phase rotation is in the wrong direction or if there is a failure of any phase.

This protection may be considered to be provided in the case of generator field control having alternating current motor-generator driving motors, provided a reversal of phase will not cause the elevator driving machine motor to operate in the wrong direction. Controllers on which switches are operated by polyphase torque motors provide inherent protection against phase reversal or failure.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23276, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23277 What requirements apply to grounding and overcurrent protections?** (1) Control and operating circuit requirements must comply with Article 620-61 of the National Electrical Code.

(2) Grounding methods must comply with Articles 620-81 through 620-85 of the National Electrical Code.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23277, filed

12/22/00, effective 1/22/01.]

**WAC 296-96-23278 What requirements apply to the absorption of regenerated power?** When a power source is used which, in itself, is incapable of absorbing the energy generated by an overhauling load, means for absorbing sufficient energy to prevent the elevator from attaining governor tripping speed or a speed in excess of 125 percent of rated speed, whichever is lesser, must be provided on the load side of each elevator power supply line disconnecting means.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23278, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23279 What requirements apply to door by-pass systems?** Door bypass systems, where used, must conform to the requirements of ASME A17.1, Rule 210.1e.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23279, filed 12/22/00, effective 1/22/01.]

## Section 11 Emergency Operation and Signaling Devices

**WAC 296-96-23280 What requirements apply to all car emergency signaling devices in all buildings?** All elevators must be equipped with an audible signaling device that can be activated by a switch or button marked "alarm." This switch or button must be located in or adjacent to each car's operating panel.

The signaling device must be located inside the building and audible inside the car and outside the hoistway. One signaling device may be used for a group of elevators.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23280, filed 12/22/00, effective 1/22/01.]

## Section 12 Suspension Systems and Their Connections

**WAC 296-96-23282 What requirements apply to suspension systems?** Cars must be suspended by steel wire ropes attached to the car frame or passing around sheaves attached to the car frame. Only iron (low carbon steel) or steel wire ropes, having the commercial classification "elevator wire rope," or wire rope specifically constructed for elevator use may be used for the suspension of elevator cars and for the suspension of counterweights. The wire material for ropes must be manufactured by the open-hearth or electric furnace process or its equivalent.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23282, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23283 What requirements apply to rope data tags?** At each rope renewal, a new metal data tag must be securely attached to one of the wire rope fastenings. Rope data tags must be durable and readily legible. The height of letters and figures must be no less than 1/16 inch. This data tag must bear the following information:

(1) The diameter in inches;

- (2) The manufacturer's rated breaking strength;
- (3) The grade of material used;
- (4) The month and year the ropes were installed;
- (5) Whether nonpreformed or preformed;
- (6) Construction classification
- (7) Name of the person or firm who installed the ropes;
- (8) Name of the manufacturer of the rope;
- (9) The number of ropes; and
- (10) The date on which the rope was resocketed or other types of fastening changed.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23283, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23284 What is the factor of safety for wire suspension ropes?** The factor of safety for wire suspension ropes must at least be equivalent to the values shown in the following table. The factor of safety must be based on the actual rope speed corresponding to the car's rated speed. The factor of safety must be calculated by the following formula:

$$f = S \text{ times } N \text{ over } W$$

where

N = number of runs of rope under load. (For 2:1 roping, twice the number of ropes used. For 3:1 roping, three times, etc.)

S = manufacturer's rated breaking strength of one rope.

W = maximum static load imposed on all car ropes with the car and its rated load at any position in the hoistway.

50	7.60	6.65	605	10.85	9.65
75	7.75	6.85	700	11.00	9.80
100	7.95	7.00	750	11.15	9.90
125	8.10	7.15	800	11.25	10.00
150	2.25	7.30	850	11.35	10.10
175	8.40	7.45	900	11.45	10.15
200	8.60	7.65	950	11.50	10.20
225	8.75	7.75	1000	11.55	10.30
250	8.90	7.90	1050	11.65	10.35
300	9.20	8.20	1100	11.70	10.40
350	9.50	8.45	1150	11.75	10.45
400	9.75	8.70	1200	11.80	10.50
450	10.00	8.90	1250	11.80	10.50
500	10.25	9.15	1300	11.85	10.55
550	10.45	9.30	1350	11.85	10.55
600	10.70	9.50	1400-2000	11.90	10.55

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23284, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23285 What is the minimum number of suspension ropes allowed?** All elevators, except freight elevators that do not carry passengers or freight handlers and have no means of operation in the car, must conform to the following requirements:

(1) The minimum number of hoisting ropes used is three for traction elevators and two for drum-type elevators. Where a car counterweight is used, the number of counterweight ropes used must not be less than two.

(2) The minimum diameter of hoisting and counterweight ropes is 3/8 inch. Outer wires of the ropes must be no less than 0.024 inch in diameter. The term "diameter" where used in this section refers to the nominal diameter as given by the rope manufacturer.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23285, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23287 What requirements apply to suspension rope equalizers?** Suspension rope equalizers, where provided, must be of the individual-compression spring type.

Equalizers of other types may be used with traction elevators provided the equalizers and fastenings are approved by the authority having jurisdiction on the basis of adequate tensile and fatigue tests made by a qualified laboratory. Such tests must show the ultimate strength of the equalizer and its fastenings in its several parts and assembly, which must be no less than 10 percent in excess of the strength of suspension ropes, provided that equalizers of the single-bar type, or springs in tension, must not be used to attach suspension ropes to cars or counterweights or to dead-end hitch plates.

**EXCEPTION:** The requirements of this section do not apply to rope equalizers that meet Rule 2.20.5 in ASME A17.1-2000.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185, 70.87.190, 2002 c 98, 2003 c 143 and 2004 c 66. WSR 04-12-

Table 3.7.1					
MAXIMUM FACTORS OF SAFETY FOR SUSPENSION WIRE ROPES					
Rope Speed, fpm	Minimum Factor of Safety		Rope Speed, fpm	Minimum Factor of Safety	
	Passenger	Freight		Passenger	Freight

047, § 296-96-23287, filed 5/28/04, effective 6/30/04. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23287, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23288 What requirements apply to securing suspension wire ropes to winding drums?** Suspension wire ropes on winding drum machines must have the drum ends of the ropes secured on the inside of the drum by clamps, tapered babbitted sockets, or other means approved by the department.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23288, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23289 What requirements apply to spare rope turns on winding drum machines?** Suspension wire ropes of winding drum machines must have the drum ends of the ropes secured on the inside of the drum by clamps or by tapered babbitted sockets, or by other means approved by the department.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23289, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23290 What requirements apply to suspension rope fastenings?** Spliced eyes by return loop may continue in service. Suspension rope fastenings must conform to the requirements of ASME A17.1 Rule 212.9 when the ropes are replaced.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23290, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23291 What requirements apply to auxiliary rope fastening devices?** Auxiliary rope fastening devices, designed to support cars or counterweights if any regular rope fastenings fail, may be provided subject to approval by the authority having jurisdiction.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23291, filed 12/22/00, effective 1/22/01.]

### **Subpart III Hydraulic Elevators**

**WAC 296-96-23300 What is the scope of Subpart III, Hydraulic Elevators?** Subpart III, Hydraulic Elevator, is the minimum standard for existing direct plunger and roped hydraulic elevators.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23300, filed 12/22/00, effective 1/22/01.]

## **Section 1 Hoistways, Hoistway Enclosures, and Related Construction**

**WAC 296-96-23302 What requirements apply to**

**hoistways, hoistway enclosures and related construction?** All hoistways, hoistway enclosures and related construction must conform to the requirements of Subpart I, Hoistways and Related Construction for Electric and Hydraulic Elevators.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23302, filed 12/22/00, effective 1/22/01.]

## **Section 2 Mechanical Equipment**

**WAC 296-96-23304 What requirements apply to buffers and bumpers?** Car buffers or bumpers must be provided. Solid bumpers may be used in lieu of buffers where the rated speed is 50 feet per minute or less.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23304, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23307 What requirements apply to car frames and platforms?** All car frames and platforms must conform to the requirements of WAC 296-96-23206.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23307, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23309 What requirements apply to car enclosures?** Car enclosures must conform to the requirements of WAC 296-96-23215.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23309, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23311 What requirements apply to capacity and loading?** Capacity and loading must conform to the requirements of WAC 296-96-23240.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23311, filed 12/22/00, effective 1/22/01.]

## **Section 3 Driving Machines**

**WAC 296-96-23313 What requirements apply to driving machine connections?** The driving member of a direct plunger driving machine must be attached to the car frame or car platform with fastenings of sufficient strength to support that member.

The connection to the driving machine must be capable of withstanding, without damage, any forces resulting from a plunger stop.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23313, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23316 What requirements apply to plunger stops?** Plungers must be provided with solid metal stops and/or other means to prevent the plunger from travel-

ing beyond the limits of the cylinder. Stops must be designed and constructed so as to stop the plunger from maximum speed in the up direction under full pressure without damage to the connection to the driving machine, plunger, plunger connection, or any other parts of the hydraulic system. For rated speeds exceeding 100 feet per minute where a solid metal stop is provided, means other than the normal terminal stopping device (i.e., emergency terminal speed limiting device) must be provided to retard the car to 100 feet per minute with retardation no greater than gravity, before striking the stop.

[Statutory Authority: Chapter 70.87 RCW. WSR 07-24-041, § 296-96-23316, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87-020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23316, filed 12/22/00, effective 1/22/01.]

#### Section 4 Valves, Supply Piping, and Fittings

**WAC 296-96-23318 What requirements apply to pump relief valves?** (1) Each pump or group of pumps must be equipped with a relief valve conforming to the following specifications, except as covered by subsection (2) of this section:

(a) The relief valve must be located between the pump and the check valve and must be of such a type and installed in the by-pass connection so that the valve cannot be shut off from the hydraulic system.

(b) The relief valve must be preset to open at a pressure no greater than 125 percent of working pressure.

(c) The size of the relief valve and bypass must be sufficient to pass the maximum rated capacity of the pump without raising the pressure more than 20 percent above that at which the valve opens. Two or more relief valves may be used to obtain the required capacity.

(d) Relief valves having exposed pressure adjustments, if used, must have their means of adjustment sealed after being set to the correct pressure.

(2) No relief valve is required for centrifugal pumps driven by induction motors, provided the shutoff, or maximum pressure which the pump can develop, is not greater than 135 percent of the working pressure at the pump.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23318, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23321 What requirements apply to check valves?** A check valve must be provided and must be installed so that it will hold the elevator car with rated load at any point when the pump stops or the maintained pressure drops below the minimum operating pressure.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23321, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23322 What requirements apply to supply piping and fittings?** Supply piping and fittings must be in sound condition and secured in place.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23322, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23323 What requirements apply to flexible hydraulic connections?** When flexible hydraulic connections are replaced, the requirements of ANSI A17.1, Rule 303.1d must be met in all respects. Where flexible connections pass through walls, the replacement must be made with steel piping.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23323, filed 12/22/00, effective 1/22/01.]

#### Section 5 Tanks

**WAC 296-96-23324 What general requirements apply to tanks?** (1) All tanks must have sufficient capacity to provide for an adequate liquid reserve to prevent the entrance of air or other gas into the system.

(2) The permissible minimum liquid level must be clearly indicated.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23324, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23325 What requirements apply to pressure tanks?** (1) Tanks which may be subjected to vacuum sufficient to cause collapse must be provided with one or more vacuum relief valves with openings of sufficient size to prevent collapse of the tank.

(2) Tanks must be provided with one or more gauge glasses attached directly to the tank and equipped to shut off the liquid automatically in case of failure of the glass. The gauge glass or glasses must be located so as to indicate any level of the liquid between permissible minimum and maximum levels and be equipped with a manual cock at the bottom of the lowest glass.

(3) Tanks must be provided with a pressure gauge which will indicate the pressure correctly to no less than 1 1/2 times the pressure setting of the relief valve. The gauge must be connected to the tank or water column by pipe and fittings with a stop cock in such a manner that it cannot be shut off from the tank except by a stop cock. The stop cock must have a "T" or level handle set in line with the direction of flow through the valve when open.

(4) Tanks must have a 1/4 inch pipe size valve connection for attaching an inspector's pressure gauge when the tank is in service.

(5) Tanks must be equipped with means to render the elevator inoperative if for any reason the liquid level in the tank falls below the permissible minimum.

(6) Tanks must be equipped with means for internal inspection.

(7) Piping and fittings for gauge glasses, relief valves, and pressure gauges must be of a material that will not be corroded by the liquid used in the tank.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23325, filed 12/22/00, effective 1/22/01.]



## **Section 6 Terminal Stopping Devices**

**WAC 296-96-23326 What requirements apply to terminal stopping devices?** Terminal stopping devices must conform to the requirements of WAC 296-96-23262.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23326, filed 12/22/00, effective 1/22/01.]

## **Section 7 Operating Devices and Control Equipment**

**WAC 296-96-23328 What requirements apply to operating devices?** Operating devices must conform to the requirements of WAC 296-96-23266 and 296-96-23268.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23328, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23330 What requirements apply to car top operating devices?** Top-of-car operating devices must be provided and must conform to the requirements of WAC 296-96-23270, except for uncounterweighted elevators having a rise of no more than 15 feet.

The bottom normal terminal stopping device may be made ineffective while the elevator is under the control of the top-of-car operating device.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23330, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23332 What requirements apply to anti-creep leveling devices?** Each elevator must be provided with an anticreep leveling device conforming to the following specifications:

(1) It must maintain the car within 3 inches of the landing regardless of the position of the hoistway door.

(2) For electrohydraulic elevators, it must operate the car only in the up direction.

(3) For maintained pressure hydraulic elevators, it must operate the car in both directions.

(4) Its operation may depend on the availability of the electric power supply provided that:

(a) The power supply line disconnecting means required by WAC 296-96-23274 is kept in the closed position at all times except during maintenance, repairs, and inspections;

(b) The electrical protective devices required by WAC 296-96-23334 must not cause the power to be removed from the device.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23332, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23334 What requirements apply to electrical protective devices?** Electrical protective devices, if provided, must conform with the requirements of WAC

296-96-23272 and operate as follows:

(1) The following devices must prevent operation of the elevator by the normal operating device and also the movement of the car in response to the anticreep leveling device:

(a) Stop switches in the pit;

(b) Stop switches on top of the car; and

(c) Car side emergency exit door electric contacts, where such doors are provided.

(2) The following devices must prevent the operation of the elevator by the normal operating device but the anticreep leveling device required by WAC 296-96-23332 must remain operative:

(a) Emergency stop switches in the car;

(b) Broken rope, tape, or chain switches on normal terminal stopping devices when such devices are located in the machine room or overhead space;

(c) Hoistway door interlocks or hoistway door electric contacts;

(d) Car door or gate electric contacts; and

(e) Hinged car platform sill electric contacts.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23334, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23336 What requirements apply to power supply line disconnects?** Power supply line disconnects must conform to the requirements of WAC 296-96-23274.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23336, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23338 What requirements apply to devices that make hoistway door interlocks or electric contacts and car door (gate) electric contacts inoperative?** The installation of these contacts must conform to the requirements of WAC 296-96-23221.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23338, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23340 What requirements apply to control and operating circuits?** Control and operating circuits must conform to the requirements of WAC 296-96-23222.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23340, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23342 What requirements apply to emergency operation and signaling devices?** Emergency operation and signaling devices must conform to the requirements of WAC 296-96-23280.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23342, filed 12/22/00, effective 1/22/01.]

## **Section 8 Additional Requirements for Counterweighted Hydraulic Elevators**

**WAC 296-96-23344 What additional requirements apply to counterweighted hydraulic elevators?** Counterweighted hydraulic elevators must be roped so that the counterweight must not strike the overhead when the car is resting on its fully compressed buffer. Counterweighted hydraulic elevators must conform to the requirements of WAC 296-96-23205, where applicable.

Where counterweights are provided, counterweight buffers must be provided.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23344, filed 12/22/00, effective 1/22/01.]

#### **Subpart IV Escalators**

**WAC 296-96-23400 What is the scope of Subpart IV, Escalators?** Subpart IV, Escalators, is the minimum standard for existing escalators that are used to transport passengers.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23400, filed 12/22/00, effective 1/22/01.]

#### **Section 1 Construction**

**WAC 296-96-23405 What requirements apply to balustrades?** The balustrade must be totally closed except where the handrail enters the newel base. Gaps between interior panels are permitted provided that they are no wider than 3/16 inch and the edges are rounded or beveled.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23405, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23408 How much clearance is required between skirt panels and step treads?** The clearance on each side of the steps between the step tread and the adjacent skirt panel must be no more than 3/16 inch, unless otherwise stated in ASME A17.1-8.6.8.

[Statutory Authority: Chapter 70.87 RCW. WSR 13-24-066, § 296-96-23408, filed 11/27/13, effective 1/1/14. Statutory Authority: RCW 70.87.-020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23408, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23410 What requirements apply to guards at ceiling or soffit intersections?** (1) A solid guard must be provided in the intersection of the angle of the outside balustrade (deck board) and the ceiling or soffit, except as indicated in subsection (2) of this section. The vertical edge of the guard must be a minimum of 8 inches. The escalator side of the vertical face of the guard must be flush with the face of the wellway. The exposed edge of the guard must be rounded and have a minimum width of 1/4 inch.

(2) Guards are not required under the following conditions:

(a) On high decks where the clearance of the outside

edge of the deck and the ceiling or soffit is more than 12 inches or where the projected intersection of the outside deck and the ceiling or soffit is more than 24 inches from the centerline of the handrail;

(b) On low decks where the centerline of the handrail is more than 14 inches from the ceiling or soffit.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23410, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23412 What requirements apply to anti-slide devices?** On high deck balustrades, antislides must be provided on decks or combination of decks when the outer edge of the deck is greater than 12 inches from the centerline of the handrail or on adjacent escalators when the distance between the centerline of the handrails is greater than 16 inches.

These devices must consist of raised objects fastened to the decks, not closer than 4 inches to the handrail and spaced not greater than 6 feet apart. The height must be no less than 3/4 inch. There must be no sharp corners or edges.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23412, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23414 What requirements apply to handrails?** Each escalator must be equipped with a handrail that moves in the same direction and at substantially the same speed as the steps.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23414, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23416 What requirements apply to handrail guards?** Hand or finger guards must be provided at the point where the handrail enters the balustrade.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23416, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23418 What requirements apply to step riser slotting?** Escalators with smooth curved surface risers must have either:

(1) Steps having cleated risers provided with vertical cleats which mesh with slots on the adjacent step tread as the steps make the transition from the incline to the horizontal; or

(2) Means to cause the opening of the power circuits to the escalator driving machine motor and brake should a step be displaced against the upthrust track at the upper and lower curves in the passenger carrying line of the track system.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23418, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23420 What requirements apply to step tread slotting?** The tread surface of each step must be slotted in a direction parallel to the travel of the steps.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23420, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23422 What requirements apply to combplates?** There must be a combplate at the entrance and at the exit of every escalator. The combplate teeth must be meshed with and set into the slots in the tread surface so that the points of the teeth are always below the upper surface of the treads.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23422, filed 12/22/00, effective 1/22/01.]

## Section 2 Brakes

**WAC 296-96-23424 What general requirements apply to escalator brakes?** Escalators must be equipped with a brake capable of stopping the up or down traveling escalator with any load up to the brake rated load. The brake must be mechanically or magnetically applied. If the brake is magnetically applied, a ceramic permanent magnet must be used.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23424, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23427 What requirements apply to main drive shaft brakes?** If the escalator brake is separated from the main drive shaft by a chain used to connect the driving machine to the main drive shaft, a mechanically or magnetically applied brake capable of stopping a down running escalator with brake rated load must be provided on the main drive shaft. If the brake is magnetically applied, a ceramic permanent magnet must be used.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23427, filed 12/22/00, effective 1/22/01.]

## Section 3 Operating and Safety Devices

**WAC 296-96-23429 What requirements apply to starting switches?** Starting switches must be of the key-operated type and must be located so that the escalator steps are within sight.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23429, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23431 What requirements apply to emergency stop buttons?** There must be a red stop button in an accessible location at the top and bottom landings of each escalator. The operation of either one of these buttons must cause the interruption of power to the escalator. It must be impossible to start an escalator by means of these buttons. These buttons must be marked "escalator stop button."

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120,

70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23431, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23432 What requirements apply to speed governors?** (1) A speed governor must be provided, except as specified in subsection (2) of this section. Its operation must cause the interruption of power to the driving machine if the speed of the steps exceeds a predetermined value, which must be no more than 40 percent above the rated speed.

(2) The speed governor is not required where an alternating current squirrel cage induction motor is used and the motor is directly connected to the driving machine. (NOTE: The governor may be omitted in such case even though a chain is used to connect the sprocket on the driving machine to the sprocket on the main drive shaft.)

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23432, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23434 What requirements apply to broken step-chain devices?** A broken step-chain device must be provided to cause the interruption of power to the driving machine if a step chain breaks, and, where no auto-matic chain tension is provided, if excessive sag occurs in either step chain.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23434, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23436 What requirements apply to brake applications?** The brake must automatically stop the escalator when any of the safety devices function.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23436, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23438 What requirements apply to broken drive-chain devices?** When the driving machine is connected to the main drive shaft by a chain, a device must be provided which will cause the application of the brake on the main drive shaft and also stop the drive machine if the drive chain parts.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23438, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23440 What requirements apply to skirt obstruction devices?** Means must be provided to stop the escalator if an object becomes accidentally caught between the step and the skirt as the step approaches the upper or lower combplate. The device shall be located so that the escalator will stop before that object reaches the comb-plate.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23440, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23442 What requirements apply to rolling shutter devices?** Rolling shutters, if used, must be equipped with a device which will be activated as the shutters begin to close to cause the opening of the power circuit to the

escalator driving machine motor and brake.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23442, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23444 What requirements apply to reversal stop device?** Means must be provided to cause the opening of the power circuit to the driving machine motor and brake in case of accidental reversal of travel while the escalator is operating in the ascending direction.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23444, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23446 What requirements apply to tandem operations?** Tandem operation escalators must be electrically interlocked where traffic flow is such that bunching will occur if the escalator is carrying passengers away from the intermediate landing stops.

The electrical interlocks must stop the escalator carrying passengers into the common intermediate landing if the escalator carrying passengers away from the landing stops. These escalators must also be electrically interlocked to assure that they run in the same direction.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23446, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23448 What requirements apply to caution signs?** A caution sign must be located at the top and bottom landings of each escalator, readily visible to the boarding passengers. The sign must be of the standard design recognized by the elevator industry and include the following:

- (1) Caution;
- (2) Passenger only;
- (3) Hold handrail;
- (4) Attend children; and
- (5) Avoid sides.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23448, filed 12/22/00, effective 1/22/01.]

## Section 4 Lighting of Step Treads

**WAC 296-96-23450 What requirements apply to step tread lighting?** Step treads and landings must be illuminated throughout. The light intensity on the treads must not be less than 5 ftc (54 kx).

The illumination shall be uniform intensity and shall not contrast materially with that of the surrounding area.

[Statutory Authority: Chapter 70.87 RCW. WSR 07-24-041, § 296-96-23450, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87-020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23450, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23455 What requirements apply to comb and step distinction?** There shall be a visual contrast between the comb and step, achieved by color, pattern, or texture.

[Statutory Authority: Chapter 70.87 RCW. WSR 07-24-041, § 296-96-23455, filed 11/30/07, effective 1/1/08.]

**WAC 296-96-23460 What requirements apply to safety zone?** The entry and exit zone shall be kept clear of all obstacles. The width of the zone shall be not less than the width between the centerlines of the handrails plus eight inches. The length of the zone, measured from the end of the newel, shall be not less than twice the distance between the centerlines of the handrails.

**EXCEPTION:** On the entrance side, the safety zone distance may be reduced, when cart restriction devices are installed, with prior written permission.

[Statutory Authority: Chapter 70.87 RCW. WSR 07-24-041, § 296-96-23460, filed 11/30/07, effective 1/1/08.]

**WAC 296-96-23465 What requirements apply to landing access plates?** Access plates at the top and bottom landings shall be properly located and securely fastened in place when no more than seventy lbf effort is required to open the access plate.

[Statutory Authority: Chapter 70.87 RCW. WSR 07-24-041, § 296-96-23465, filed 11/30/07, effective 1/1/08.]

## Subpart V Dumbwaiters and Hand-Powered Elevators

**WAC 296-96-23500 What is the scope of Subpart V, Dumbwaiters and hand-powered elevators?** Subpart V, Dumbwaiters and Hand-Powered Elevators, is a minimum standard for existing electric and hand-powered dumbwaiters and hand-powered elevators.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23500, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23510 What requirements apply to electric and electro-hydraulic dumbwaiters?** (1) Dumbwaiter cars may be constructed of metal or wood and must be in compliance with local ordinances as to fire resistance providing it is constructed to carry its rated load without distortion. The dumbwaiter car must be fully enclosed except for the landing sides. The car floor must not exceed 9 square feet in area and the total inside height must not exceed 4 feet and the maximum capacity must not exceed 500 pounds.

(2) Electrically operated machines must be equipped with brakes that are electrically released and applied automatically by springs in conformity with the requirements set forth in WAC 296-96-23260.

(3) Dumbwaiters equipped with winding drum machines having a travel of more than 30 feet and a rated load of more than 100 pounds, must be equipped with a slack rope switch which will automatically remove the power from the motor and brake when the hoisting ropes become slack.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23510, filed

12/22/00, effective 1/22/01.]

**WAC 296-96-23540 What requirements apply to hand-power elevators and dumbwaiters?** (1) Cars of hand-power elevators and dumbwaiters must be enclosed on all sides not used for entrance. Elevator cars upon which an operator is permitted to ride must have no more than one compartment.

(2) Hand elevators having a travel of more than 15 feet must have a car safety, capable of stopping and sustaining the car and rated load. The car safety device need not be operated by a speed governor and may be of the instantaneous type operated as a result of the breaking and slackening of the suspension members.

(3) Hoistway doors for hand-powered elevators must be designed so that they will ensure protection at each landing.

(4) Doors for hand-powered dumbwaiters must be designed so that they will ensure protection at all landings.

(5) Every hoistway door, gate, or entrance of hand elevators and hand dumbwaiters must have conspicuously displayed on the landing side in letters no less than 2 inches high, the words "Danger—Elevator—Keep closed," or "Dan- ger—Dumbwaiter—Keep closed."

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23540, filed 12/22/00, effective 1/22/01.]

## **Subpart VI Alterations, Repairs, Maintenance, and Testing**

**WAC 296-96-23605 Examination of WAC material lifts, special purpose elevators, electric manlifts, and hand-powered manlifts.** The current language under WAC 296-96-23605 applies. See <https://app.leg.wa.gov/WAC/default.aspx?cite=296-96-23605>.

**WAC 296-96-23606 Installations placed in red tag status.** The current language under WAC 296-96-23606 applies. See <https://app.leg.wa.gov/WAC/default.aspx?cite=296-96-23606>.

**WAC 296-96-23630 What requirements apply to elevator equipment displaced by seismic activity?** Any elevator equipment, hydraulic or cable that is displaced as a result of seismic activity must be anchored to conform with current standards, when repaired or reanchored to the building.

[Statutory Authority: Chapter 70.87 RCW. WSR 07-24-041, § 296-96-23630, filed 11/30/07, effective 1/1/08. Statutory Authority: RCW 70.87-020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23630, filed 12/22/00, effective 1/22/01.]

## **Subpart VII Lifts for Physically Handicapped**

**WAC 296-96-23700 Lifts for persons with disabilities.** The current language under WAC 296-96-23700 applies. See <https://app.leg.wa.gov/WAC/default.aspx?cite=296-96-23700>.

**WAC 296-96-23701 Maintenance and tests on commercial accessibility lifts.** The current language under WAC 296-96-23701 applies. See <https://app.leg.wa.gov/WAC/default.aspx?cite=296-96-23701>.

## **Subpart VIII Sidewalk Elevators**

**WAC 296-96-23800 What is the scope of Subpart VIII, Sidewalk Elevators?** Subpart VIII, Sidewalk Elevators, is a minimum standard for existing power sidewalk elevators.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23800, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-23810 What requirements apply to electrically operated sidewalk elevators?** Where the top opening is located in the sidewalk or other area exterior to the building, all electrical equipment on the car or in the hoistway must be weatherproof. The operation of power sidewalk elevators through openings in the sidewalk, or through openings in other exterior areas which are protected by hinged doors or vertically lifting covers, must conform to these following requirements:

(1) The elevator must be operable in both the up and down directions through the opening, only from the sidewalk or other exterior area. The operations must be by means of:

(a) Key-operated continuous pressure type, up and down switches; or

(b) Continuous pressure type up and down operating buttons on the free end of a detachable, flexible cord five feet or less in length.

(c) Continuous pressure type up and down operating buttons may be installed on the elevator car providing the control is so designed that the buttons will not function unless the sidewalk doors are locked in the open position and that a safety screen that will open and close with the car is installed.

(2) Key-operated switches must be of continuous pressure spring-return type, with the key removable only when the switch is in the off position.

[Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. WSR 01-02-026, § 296-96-23810, filed 12/22/00, effective 1/22/01.]

**WAC 296-96-24000 through WAC 296-96-24670.** The current language for these sections apply. See [https://app.leg.wa.gov/WAC/default.aspx?cite=296-96-](https://app.leg.wa.gov/WAC/default.aspx?cite=296-96-24000)