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Chapter 296-96 WAC (1/1/2014)

SAFETY REGULATIONS AND FEES FOR ALL ELEVATORS, DUMBWAITERS, ESCALATORS AND OTHER CONVEYANCES

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DRAFT future suggessted language

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DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

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PART A - ADMINISTRATIVE

WAC 296-96-00500 Scope, purpose, and authority.

This chapter is authorized by chapter 70.87 RCW covering elevators, lifting devices, moving walks, and other conveyances. The purpose of this chapter is to:

(1) Provide for the safe design, *installation,* mechanical and electrical operation, *maintenance, examinations, safety tests* and inspection of conveyances, and the performance of conveyance work.

(2) Ensure that all such operation, design inspection, and conveyance work subject to the provisions of this chapter will be reasonably safe to persons and property and in conformity with the provisions of this chapter and the applicable statutes of the state of Washington.

(3) Establish and ensure compliance with the minimum standards for becoming a licensed elevator contractor and/or licensed elevator mechanic performing work on elevators or other conveyances covered by chapter 70.87 RCW and this chapter.

(4) In any case where the national standards codes adopted by reference in chapter 296-96 WAC conflict with the requirements of national standards adopted, this chapter supersedes.

(5) When no applicable standard exists to address subsections (1), (2), and (3) of this section the department will issue a ruling or interpretation that outlines the intent of this chapter.

WAC 296-96-00600 What rules apply to your conveyance?

Elevators and other conveyances must comply with the rules adopted by the department that were in effect at the time the conveyance was permitted, regardless of whether the rule(s) has been repealed, unless any new rule specifically states that it applies to all conveyances, regardless of when the conveyance was permitted. Copies of previous rules adopted by the department are available upon request.

Please note, if the conveyance is altered the components associated with the alteration must comply with all of the applicable rules adopted by the department in effect at the time the conveyance *alteration was permitted*. If the department determines that a conveyance was altered without a permit and inspection, the alteration will be required to comply with the applicable rules adopted by the department at the time the noncompliant alteration was identified.

WAC 296-96-00650 Which National Elevator Codes and Supplements has the department adopted?

NATIONAL ELEVATOR CODES AND SUPPLEMENTS ADOPTED				
TYPE OF CONVEYANCE	NATIONAL CODE AND SUPPLEMENTS	DATE INSTALLED		COMMENTS
		FROM	TO	

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NATIONAL ELEVATOR CODES AND SUPPLEMENTS ADOPTED				
TYPE OF CONVEYANCE	NATIONAL CODE AND SUPPLEMENTS	DATE INSTALLED		COMMENTS
		FROM	TO	
Elevators, Dumbwaiters, Escalators	American Standard Safety Code (ASA) A17.1, 1962	11/1/1963	12/29/1967	Adopted Standard
Moving Walks	American Safety Association A17.1.13, 1962	11/1/1963	12/29/1967	Adopted Standard
Elevators, Dumbwaiters, Escalators, and Moving Walks	U.S.A. Standards (USAS) USAS A17.1, 1965; Supplements A17.1a, 1967; A17.1b, 1968; A17.1c, 1969;	12/30/1967	2/24/1972	Adopted Standard USAS 1965 includes revision and consolidation of A17.1-1, 1960, A17.1a, 1963, and A17.1-13, 1962. Adopted code and supplements, excluding Appendix E and ANSI 17.1d, 1970.
Elevators, Dumbwaiters, Escalators, and Moving Walks	American National Standard Institute ANSI A17.1, 1971	2/25/1972	6/30/1982	Adopted Standard as amended and revised through 1971.
Elevators, Dumbwaiters, Escalators, and Moving Walks	ANSI A17.1, 1971; A17.1a, 1972	2/25/1972	6/30/1982	Adopted Supplement
Elevators, Dumbwaiters, Escalators, and Moving Walks	ANSI A17.1, 1981	7/1/1982	1/9/1986	Adopted Standard
Elevators, Dumbwaiters, Escalators, and Moving Walks	ANSI A17.1a, 1982	3/1/1984	1/9/1986	Adopted Supplement
Elevators, Dumbwaiters, Escalators, and Moving Walks	ANSI A17.1b, 1983	12/1/1984	1/9/1986	Adopted Supplement, except portable escalators covered by Part VIII of A17.1b, 1983.
Elevators, Dumbwaiters, Escalators, and Moving Walks	ANSI A17.1, 1984	1/10/1986	12/31/1988	Adopted Standard Except Part XIX. After 11/1/1988 Part II, Rule 211.3b was replaced by WAC 296-81-275.

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NATIONAL ELEVATOR CODES AND SUPPLEMENTS ADOPTED				
TYPE OF CONVEYANCE	NATIONAL CODE AND SUPPLEMENTS	DATE INSTALLED FROM	DATE INSTALLED TO	COMMENTS
Elevators, Dumbwaiters, Escalators, and Moving Walks	ANSI A17.1a, 1985	1/10/1986	12/31/1988	Adopted Supplement
Elevators, Dumbwaiters, Escalators, and Moving Walks	ANSI A17.1b, 1985; A17.1c, 1986; A17.1d, 1986; and A17.1e, 1987	12/6/1987	12/31/1988	Adopted Supplement
Elevators, Dumbwaiters, Escalators, and Moving Walks	ANSI A17.1, 1987	1/1/1989	12/31/1992	Adopted Standard Except Part XIX and Part II, Rule 211.3b. WAC 296-81-275 replaced Part II, Rule 211.3b.
Elevators, Dumbwaiters, Escalators, and Moving Walks	ASME A17.1, 1990	1/1/1993	2/28/1995	Adopted Standard Except Part XIX and Part V, Section 513. Chapter 296-94 WAC replaced Part V, Section 513.
Elevators, Dumbwaiters, Escalators, and Moving Walks	ASME A17.1, 1993	3/1/1995	6/30/1998	Adopted Standard Except Part XIX and Part V, Section 513. Chapter 296-94 WAC replaced Part V, Section 513.
Elevators, Dumbwaiters, Escalators, and Moving Walks	ASME A17.1, 1996	6/30/1998	6/30/2004	Adopted Standard Except Part V, Section 513.
Elevators, Dumbwaiters, Escalators, and Moving Walks	ASME A17.1, 2000; A17.1a, 2002; A17.1b, 2003	7/1/2004	1/1/2008	Adopted Standards and Addenda Except Rules 2.4.12.2, 8.6.5.8 and Sections 5.4, 7.4, 7.5, 7.6, 7.9, 7.10, 8.10.1.1.3 and 8.11.1.1.
Safety Standards for Platform Lifts and Stairway Chairlifts	ASME A18.1, 1999; A18.1a, 2001; A18.1b, 2001	7/1/2004	1/1/2008	Adopted Standards and Addenda.
Safety Code for Elevators, Escalators, Dumbwaiters, Residential Elevators, Special Purpose	ASME A17.1-2004; A17.1a-2005	1/1/2008	*1/1/2014*	Adopted Standards and Addenda Except Rules 2.4.7.2, marked car top clearance space, 8.6.5.8, Maintenance of safety bulkhead, 5.4, Private residence incline elevators, 7.4 & 7.5 &7.9 & 7.10 Material lifts, 8.10.1.1.3 and 8.11.1.1, QEI-1 inspector.

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NATIONAL ELEVATOR CODES AND SUPPLEMENTS ADOPTED				
TYPE OF CONVEYANCE	NATIONAL CODE AND SUPPLEMENTS	DATE INSTALLED		COMMENTS
		FROM	TO	
Safety Code for Platform Lifts and Stairway Chairlifts	ASME A18.1-2005	1/1/2008	*1/1/2014*	
Safety Code for Belt Manlifts	ASME A90.1-2003	1/1/2008	*1/1/2014*	
Safety Code for Personnel Hoists, Retroactive	ANSI A10.4-2004	1/1/2008	*1/1/2014*	
Safety Code for Elevators, Escalators, Dumbwaiters, Residential Elevators, Special Purpose	*ASME A17.1-2010*	*1/1/2014*	*Current*	
Standard for Elevator Suspension, Compensation, and Governor Systems	*ASME A17.6-2010*	*1/1/2014*	*Current*	
Safety Code for Platform Lifts and Stairway Chairlifts	*ASME A18.1-2011*	*1/1/2014*	*Current*	
Safety Code for Belt Manlifts Safety	*ASME A90.1-2009*	*1/1/2014*	*Current*	
Safety Code for Personnel Hoists	*ANSI A10.4-2007*	*1/1/2014*	*Current*	

Note: Copies of codes and supplements can be obtained from The American Society of Mechanical Engineers, Order Department, 22 Law Drive, Box 2900, Fairfield, New Jersey, 07007-2900 or by visiting www.asme.org.

Comments: National codes adopted by this chapter will be identified with the applicable ASME/ANSI code reference number contained within the rules or as excluded or amended below.

(1) Exclude all references to QEI certification in ASME A17.1 from code adoption.

(2) Exclude all references and sections to Aramid fiber ropes in ASME A17.1 and A17.6 from code adoption.

(3) ASME A17.1, SECTION 1.2 PURPOSE AND EXCEPTIONS amended as follows:

The purpose of this code is to provide for the safety of life and limb, and to promote the public welfare. Compliance with this code shall be achieved by:

(a) Conformance with the requirements in ASME A17.1/CSA B44 and chapter 296-96 WAC. Additions or modifications to ASME A17.1/CSA B44 and/or chapter 296-96 WAC shall require approval from the department; or

(b) Conformance with a combination of the requirements in ASME A17.1/CSA B44, chapter 296-96 WAC, and ASME A17.7/CSA B44.7 with the following ASME A17.7 inclusions:

(i) All system or component certifications performed by an accredited elevator/escalator certification organization (AECO) under ASME A17.7/CSA B44.7, shall be approved by the department before

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any such system or component is allowed to be permitted or installed in the state of Washington. The applicant must submit all code documentation required by ASME A17.7 Section 2.10 and any other documentation as may be requested.

(ii) Sections of chapter 296-96 WAC that have taken exception to, made additions to, or modifications to ASME A17.1/CSA B44, such exceptions, additions and modifications shall supersede corresponding requirements in ASME A17.7/CSA B44.7.

(iii) The department has the final authority regarding acceptance of any item in ASME A17.7. The department may remove approval if a design has changed or unforeseen or undisclosed information is obtained.

(iv) The department will post the specific ASME A17.7 AECO certificate including exceptions agreed upon. At that time the certificate and exceptions become part of the adopted rule in the state of Washington and not subject to a variance process. The installer shall post the certificate and exceptions including all required information on each conveyance installed utilizing the ASME A17.7 method.

(v) The department may charge an additional fee for each item in review based upon the variance fee table.

(4) MARINE ELEVATOR SECTION 5.8

This chapter only applies to elevators installed on board a marine vessel flying the Washington state flag and under one hundred gross metric tons.

(5) Exclude ASME A17.1-2.4.7.2 reference for clearance reduction.

(6) Exclude ASME A17.1-5.4 private residence incline elevators and ASME A17.1-7.4, 7.5, 7.6, 7.9, and 7.10 material lifts and their corresponding 8.10.1.1.3.

(7) Exclude ASME A17.1-2.14.1.5.2 on elevators in partially enclosed hoistways. A top emergency exit shall be required.

WAC 296-96-00700 Chapter definitions.

The following definitions apply to this chapter (see RCW 70.87.010 for additional definitions necessary for use with this chapter):

"ANSI" means the American National Standard Institute.

"ASA" means the American Safety Association.

"ASME" means the American Society of Mechanical Engineers.

"Acceptable proof" refers to the documentation that must be provided to the department during the elevator contractor and mechanic license application and renewal process. Acceptable proof may include department-approved forms documenting years of experience, affidavits, letters from previous employers, declarations of experience, education credits, copies of contractor registration information, etc. Additional documentation may be requested by the department to verify the information provided on the application.

"Code" refers to nationally accepted codes (i.e., ASME, ANSI, ASA, and NEC) and the Washington Administrative Code.

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"Control room" *refers to an enclosed control space outside the hoistway of the elevator or dumbwaiter, intended for full bodily entry that contains the motor and motion controller. The room could also contain electrical and/or mechanical equipment used directly in connection with the elevator or dumbwaiter, but not the electric driving machine.*

"Control space" *refers to a space outside the hoistway of the elevator, intended to be accessed without full bodily entry, which contains the motor and motion controller. This space could also contain electrical and/or mechanical equipment used directly in connection with the elevator but not the electric driving machine or the hydraulic machine. A control space* is limited to elevators, dumbwaiters, special purpose, and material lifts. The space shall not share any location, area or room which is also accessible to the general public.*

****Note:*** *A control space must be preapproved and is limited on a case-by-case basis and should not be considered a normal installation process.*

"Decommissioning conveyance" *means a group of tasks that must be accomplished in order to place the conveyance in a long-term out-of-service status.*

"Elevator machine room" *means an enclosed machinery room outside the hoistway, intended for full bodily entry that contains the electric driving machine or the hydraulic machine and the motor controller. The room could also contain electrical and/or mechanical equipment used directly in connection with the elevator.*

"Elevator machinery space" *means a space inside or outside the hoistway, intended to be accessed with or without full bodily entry that contains elevator mechanical equipment and could also contain electrical equipment used directly in connection with the elevator. This space could also contain the electric driving machine.*

"Examination" *means a routine process or procedural task(s) or test(s) that ensures a conveyance and its systems and subsystems remain properly maintained and safe to operate.*

"Final judgment" means any money that is owed the department as the result of an individual's or firm's unsuccessful appeal of a civil penalty. Final judgment also includes any penalties assessed against an individual or firm owed the department as a result of an unappealed civil penalty or any outstanding fees due under chapter 70.87 RCW and this chapter.

"General direction - Installation and alteration work" means the necessary education, assistance, and supervision provided by a licensed elevator mechanic (in the appropriate category) who is on the same job site as the helper/apprentice at least seventy-five percent of each working day. The ratio of helper to mechanic shall be one-to-one.

"General direction - Maintenance work" means the necessary education, assistance, and supervision provided by a licensed elevator mechanic (in the appropriate category) to ensure that the maintenance work is performed safely and to code.

"Layout drawings" *or* ***"plans"*** *or* ***"shop drawings"*** *means engineering drawings that show required clearances and dimensions of elevator equipment in relation to building structure and shall include a machine room plan, hoistway plan, hoistway elevation, detail drawings, and general elevator data.*

"Lockout" means the placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

"Primary point of contact" is the designated individual employed by a licensed elevator contractor.

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"Private residence elevator" (residential elevator) *means a power passenger elevator which is limited in size, capacity, rise and speed and is installed in a private residence or multiple dwelling as a means of access to a private residence provided the elevators are so installed that they are not accessible to the general public or to other occupants in the building.*

"Red tag" or **"red tag status"** means an elevator or other conveyance that has been removed from service and operation because of noncompliance with chapter 70.87 RCW and this chapter or at the request of the owner.

"RCW" means the Revised Code of Washington.

"Tagout" means the placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed by the individual who established the tag or by a person designated by the chief elevator inspector.

"Traction elevator" means an elevator in which the friction between the hoist ropes and the machine sheave is used to move the elevator car.

"USAS" means the U.S.A. Standards.

"WAC" means the Washington Administrative Code.

WAC 296-96-00800 Advisory committee on conveyances.

(1) The purpose of the advisory committee is to advise the department on the adoption of regulations that apply to conveyances; methods of enforcing and administering the elevator law, chapter 70.87 RCW; and matters of concern to the conveyance industry and to the individual installers, owners and users of conveyances.

(2) The advisory committee consists of seven members appointed by the director or his or her authorized representative.

(3) The committee members shall serve four years. However, if a member is unable to fulfill his or her obligations, a new member may be appointed.

(4) The committee shall meet on the third Tuesday of February, May, August, and November of each year, and at other times at the discretion of the chief of the elevator section.

(5) The chief of the elevator section shall be the secretary for the advisory committee.

(6) An advisory committee member may appoint an alternate to attend meetings in case of conflict or illness.

WAC 296-96-00805 Appeal rights and hearings.

(1) Chapter 70.87 RCW provides the authority for the duties and responsibilities of the department. Except as provided in chapter 70.87 RCW and this chapter, all appeals and hearings will be conducted according to chapter 34.05 RCW, the Administrative Procedure Act and chapter 10-08 WAC, Model Rules of Procedure.

(2) A person who contests a notice of violation or infraction issued by the department may request a hearing. The request for a hearing must be:

(a) In writing;

(b) Accompanied by a certified or cashier's check, payable to the department, for two hundred dollars; and

(c) Postmarked or received by the department within fifteen days after the person receives the department's violation notice.

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(3) In all appeals of chapter 70.87 RCW and this chapter the appellant has the burden of proof by a preponderance of the evidence.

PART B - ELEVATOR CONTRACTOR AND CONVEYANCE MECHANIC LICENSES AND REGULATIONS AND FEES

NOTE: Total fees include the sum of the permit cost plus plan check fees.

WAC 296-96-00900 In general, who is required to be licensed under this chapter?

(1) Any person, firm, or company wishing to engage in the business of conveyance work regulated under chapter 70.87 RCW and this chapter must be a licensed elevator contractor.

(2) Any person wishing to perform conveyance work regulated under chapter 70.87 RCW and this chapter must be a licensed elevator mechanic employed by a licensed elevator contractor.

WAC 296-96-00902 Are there exceptions from the elevator mechanic licensing requirements?

Yes.

(1) Elevator mechanic licenses issued under chapter 70.87 RCW and this chapter are not required for:

(a) Individuals who install signal systems, fans, electric light fixtures, illuminated thresholds, finished cab flooring materials that are identical to existing materials and feed wires to the terminals on the elevator main line control provided that the individual does not require access to the pit, hoistway, or top of the car for the installation of these items.

(b) An owner or regularly employed employee of the owner performing only maintenance work of conveyances in accordance with RCW 70.87.270.

(2) Elevator mechanic licenses may not be required for certain types of incidental work that is performed on conveyances when the appropriate lockout and tagout procedures have been performed by a licensed elevator mechanic in the appropriate category. The department must be notified in writing and must approve the scope of work prior to it being performed.

(3) An elevator mechanic license in accordance with RCW 70.87.230, is not required when dismantling or removing a conveyance, as long as the building or structure as defined by its foundation outline is totally secure from public and unauthorized access, and:

(a) The entire building is completely demolished down to and including the foundation; or

(b) The entire building is returned to the basic supporting walls, floors, and roof.

Otherwise, the work is to be performed by a licensed elevator mechanic who works for a licensed elevator contractor.

WAC 296-96-00903 Are there exceptions from the elevator contractor licensing requirements?

Yes. Elevator contractor licenses issued under chapter 70.87 RCW and this chapter are not required for:

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(1) An owner or regularly employed employee of the owner performing only maintenance work of conveyances in accordance with RCW 70.87.270.

(2) A public agency that employs licensed elevator mechanics to perform maintenance.

(3) Demolition of a conveyance as outlined in RCW 70.87.230 and WAC 296-96-00902.

WAC 296-96-00904 What must you do to become and remain a licensed elevator contractor?

(1) Obtain and maintain a valid specialty or general contractor registration under chapter 18.27 RCW to engage in the business of conveyance work.

(2) Complete and submit a department-approved application. As part of the application:

(a) Specify the employee who is the licensed elevator contractor's primary point of contact.

(b) The person representing the company, firm or company who is applying for the elevator contractor's license must:

(i) Provide acceptable proof to the department that shows that the person representing the company, firm, or company has five years of work experience in performing conveyance work as verified by current and previous state of Washington elevator contractor licenses to do business; or

(ii) Pass a written examination administered by the department on chapter 70.87 RCW and this chapter. (In the case of a firm or company, the exam will be administered to the designated primary point of contact.)

(iii) Failure to pass the examination will require the submittal of a new application.

(3) Pay the fees specified in WAC 296-96-00922.

(4) The department may deny application or renewal of a license under this section if the applicant owes outstanding final judgments to the department.

(5) If the primary point of contact identified in subsection (2)(a) of this section separates employment, his/her relationship or designation is terminated, or death of the designated individual occurs, the elevator contractor must, within ninety days, designate a new individual who has successfully completed the elevator contractor examination and inform the department of the change in writing or the elevator contractor license will be automatically suspended.

(6) ASME A17.1-8.11.1.7 Unique or product-specific procedures or methods. Where unique or product-specific procedures or methods are required to inspect or test equipment, such procedures or methods shall be:

(a) Provided by the manufacturer or installer or their license may be suspended.

(b) Available to owners for their use or used by their qualified service provider.

(c) Accessible on-site to elevator personnel (see also ASME A17.1-8.6.1.2.1(f)).

(7) ASME A17.1-8.6.1.2.1 A written maintenance control program shall be in place to maintain the equipment in compliance with the requirements of ASME A17.1-8.6 and this chapter.

All elevator companies and other approved maintenance providers (see RCW 70.87.270) who continuously demonstrate noncompliance with the maintenance, examination, testing, documentation, and performance of work outlined in ASME A17.1 and this chapter, specifically Part D, Section VI, shall:

(a) Be notified in writing by the department outlining the reason or reasons for noncompliance;

(b) Respond to the department inquiry within fifteen days;

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(c) Outline a solution(s) agreeable to the department within thirty days;

(i) Otherwise the elevator company's license may be suspended until such a time as they can demonstrate compliance; and

(ii) Other approved maintenance providers shall cease maintenance, examination, and testing until such a time as they can demonstrate compliance. Continuous demonstrations of maintenance, examination, and testing noncompliance shall result in approval being revoked.

WAC 296-96-00906 What must you do to become a licensed elevator mechanic?

(1) Qualify for licensing:

(a) For conveyance work covered by all categories identified in WAC 296-96-00910 except material lifts (05), residential conveyances (06), residential inclined elevators (07) and temporary licenses (09), the applicant must comply with the applicable mechanic licensing requirements as follows:

(i) Test.

(A) The applicant must provide acceptable proof to the department that shows the necessary combination of documented experience and education credits in the applicable license category (see WAC 296-96-00910) of not less than three years' work experience in the elevator industry

performing conveyance work as verified by current and previous employers licensed to do business in this state or as an employee of a public agency; and

(B) Pass an examination administered by the department on chapter 70.87 RCW and this chapter; *or*

(ii) National exam/education.

(A) Have obtained a certificate of completion and successfully passed the mechanic examination of a nationally recognized training program for the elevator industry such as the National Elevator Industry Educational Program or its equivalent; *or*

(B) Have obtained a certificate of completion of an apprenticeship program for an elevator

mechanic, having standards substantially equal to those of chapter 70.87 RCW and this chapter, and registered with the Washington state apprenticeship and training council under chapter 49.04 RCW; or

(iii) Reciprocity.

The applicant must provide acceptable proof to the department that shows that the applicant is holding a valid license from a state having entered into a reciprocal agreement with the department and having standards substantially equal to those of chapter 70.87 RCW and this chapter.

(b) For conveyance work performed on material lifts as identified in WAC 296-96-00910(5):

Test.

(i) The applicant and the licensed elevator contractor/employer must comply with the provisions of RCW 70.87.245; and

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(ii) The applicant must pass an examination administered by the department on chapter 70.87 RCW and this chapter;

(c) For residential conveyance work covered by category (06) as identified in WAC 296-96-00910:

Test.

(i) The applicant must provide acceptable proof to the department that shows the necessary combination of documented experience and education credits in the applicable license category (see WAC 296-96-00910) of not less than two years' work experience in the elevator industry performing conveyance work as verified by current and previous employers licensed to do business in this state; and

(ii) Pass an examination administered by the department on chapter 70.87 RCW and this chapter.

(d) For residential inclined conveyance work covered by category (07) as identified in WAC 296-96-00910;

Test.

(i) The applicant must provide acceptable proof to the department that shows the necessary combination of documented experience and education credits in the applicable license category (see WAC 296-96-00910) of not less than one year's work experience in the elevator industry or not less than three years' documented experience and education credits in conveyance work as described in category (01) performing conveyance work as verified by current and previous employers licensed to do business in this state; and

(ii) Pass an examination administered by the department on chapter 70.87 RCW and this chapter.

(e) For temporary mechanic licenses as identified in WAC 296-96-00910 category (09) the applicant must provide acceptable proof from a licensed elevator contractor that attests that the temporary mechanic is certified as

qualified and competent to perform work under chapter 70.87 RCW and this chapter.

(2) Complete and submit a department-approved application.

An applicant who is required to take an examination under the provisions of this section may not perform the duties of a licensed elevator mechanic until the applicant has been notified by the department that he/she has passed the examination.

(3) Pay the fees specified in WAC 296-96-00922.

(4) The department may deny application of a license under this section if the applicant owes outstanding final judgments to the department or does not meet the minimum criteria established in the elevator laws and rules.

WAC 296-96-00907 (ASME A17.1-8.11.1.5) Making safety devices ineffective.

No person shall at any time make any required safety device or electrical protective device ineffective, except where necessary during tests and inspections. Such devices must be restored to their normal operating condition in conformity with the applicable requirements prior to returning the equipment to service (see ASME A17.1-2.26.7). If a required safety device or electrical protective device is found ineffective during the course of normal operation the conveyance must be immediately taken out of service. If the authorized mechanic or elevator company is found responsible for disabling the device(s) and placing the conveyance back into service they may have their license suspended until they

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can demonstrate conformity to the chapter (examples include, but are not limited to: Safety circuit, door and gate, terminal slowdowns, door reopening devices, anti-egress devices, or over current protection devices).

WAC 296-96-00910 What are the elevator mechanic license categories?

The following are the licensing categories for qualified elevator mechanics or temporary elevator mechanics:

(1) **Category (01):** A general elevator mechanic license encompasses mechanical and electrical operation, construction, installation, alteration, maintenance, inspection, relocation, *decommission*, and repair of all types of elevators and other conveyances in any location covered under chapter 70.87 RCW and this chapter.

(2) **Category (02):** This license is limited to the mechanical and electrical operation, construction, installation, alteration, maintenance, inspection, relocation, *decommission*, and repair of the following commercial and residential conveyances:

(a) Residential conveyances:

(i) Wheelchair lifts;

(ii) Dumbwaiters;

(iii) Incline chairlifts; and

(iv) Residential elevators;

(b) Commercial conveyances:

(i) Wheelchair lifts;

(ii) Dumbwaiters; and

(iii) Incline chairlifts.

(3) **Category (03):** This license is limited to the mechanical and electrical operation, construction, installation, alteration, maintenance, inspection, relocation, *decommission*, and repair of the following conveyances in industrial sites and grain terminals:

(a) Electric and hand powered manlifts;

(b) Special purpose elevators; and

(c) Belt manlifts.

(4) **Category (04):** This license is limited to the mechanical and electrical operation, construction, installation, alteration, maintenance, inspection, relocation, *decommission*, and repair of the following conveyances:

(a) Temporary personnel hoists;

(b) Temporary material hoists; and

(c) Special purpose elevators.

(5) **Category (05):** This license is limited to the mechanical and electrical operation, construction, installation, alteration, maintenance, inspection, relocation, *decommission*, and repair of material lifts.

(6) **Category (06):**

(a) This license is limited to the mechanical and electrical operation, construction, installation, alteration, maintenance, inspection, relocation, *decommission*, and repair of the following conveyances:

(i) Residential wheelchair lifts;

(ii) Residential dumbwaiters; and

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(iii) Residential incline chairlifts.

(b) Work experience on conveyances in (a)(i), (ii), and (iii) of this subsection may not be all inclusively applied toward the category (02) license requirements.

Note: Maintenance work performed by the owner or at the direction of the owner is exempted from licensing requirements provided that the owner resides in the residence at which the conveyance is located and the conveyance is not accessible to the general public. Such exempt work does not count toward work experience for licensure.

(7) **Category (07):** This license is limited to the mechanical and electrical operation, construction, installation, alteration, maintenance, inspection, relocation, *decommission*, and repair of residential inclined elevators.

Note: Maintenance work performed by the owner or at the direction of the owner is exempted from licensing requirements provided that the owner resides in the residence at which the conveyance is located and the conveyance is not accessible to the general public. Such exempt work does not count toward work experience for licensure.

(8) **Category (08):** This license is limited to maintenance and *nonalteration repair and replacement* of all conveyances and is further limited to employees of public agencies to obtain and maintain the license. This work should not count towards other licenses.

(9) **Category (09):** This temporary license is limited to the mechanical and electrical operation, construction, installation, alteration, maintenance, inspection, relocation, *decommission*, and repair of conveyances. This license is limited to individuals that are certified as qualified and competent by licensed elevator contractors *and have met the education and training requirements in the category of license for the work performed. See policy number 07-16-104.* The individual must be an employee of the licensed elevator contractor. The contractor shall furnish acceptable proof of competency as the department may require. Each license must recite that it is valid for a period of thirty days from the date of issuance and for such particular elevators or geographical areas as the department may designate, and otherwise entitles the licensee to the rights and privileges of an elevator mechanic license issued under chapter 70.87 RCW and this chapter.

Note: See policy number 07-16-104.

WAC 296-96-00912 How long is the elevator contractor, elevator mechanic, and temporary mechanics licensing period and what is required for renewal?

(1) Elevator contractors.

(a) The renewal period is two years from the date of issuance.

(b) As part of the renewal process the elevator contractor must:

(i) Complete and submit a department-approved application.

(ii) Designate an employee as a primary point of contact.

(iii) Pay the fees specified in WAC 296-96-00922.

(2) Elevator mechanics *(category 01-08).*

(a) The renewal period is two years from the date of your birthday. The initial license may be for a shorter period as follows. If your birth year is:

(i) In an even-numbered year, your certificate will expire on your birth date in the next even-numbered year.

(ii) In an odd-numbered year, your certificate will expire on your birth date in the next odd-numbered year.

(b) As part of the renewal process you must:

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(i) Complete and submit a department-approved application.

(ii) Have attended an approved continuing education course and submitted a certificate of completion for the course. The course must consist of not less than eight hours of instruction that must have been attended and completed within one year immediately preceding any license renewal.

(iii) Pay the fees specified in WAC 296-96-00922.

(3) Temporary elevator mechanics *(category 9). The renewal is limited to two consecutive months and further limited by no greater than six permits issued in a twelve-month period. The limitation may be extended at the discretion of the department. Examples include, but are not limited to, abnormally high rate of construction, natural disaster or work stoppage.*

(a) The renewal period is thirty days from the date of issuance.

(b) As part of the renewal process you must:

(i) Complete and submit a department-approved application.

(ii) Pay the fees specified in WAC 296-96-00922.

(iii) Have seventy-five percent of both education and training hours to obtain a license (see education policy).

(4) The department may deny renewals of licenses under this section if the applicant owes outstanding final judgments to the department.

(5) Renewals will be considered timely when the renewal application is received on or prior to the expiration date of the license.

(6) Late renewal is for renewal applications received after the expiration date of the license but no later than ninety days after the expiration of the licenses. If the application is not received within ninety days from license expiration, the licensee must reapply and pass the competency examination.

(7) A mechanic licensed in the state of Washington may take a withdrawal if they are no longer working for a company licensed in the state or no longer performing work that requires a license. A mechanic holding a valid license that wishes to withdraw their license must submit their request, in writing, to the department of labor and industries elevator section prior to the license expiration date. To cancel a withdrawal request and be reinstated, the mechanic must submit their request in writing, reapply, complete the current continuing education, and pay the renewal licensing fee.

WAC 296-96-00914 Where can you obtain information regarding department-approved continuing education course providers?

The department will produce a list of all approved training course providers and/or course contact persons that provide continuing education courses required under chapter 70.87 RCW and this chapter. This list will be available to all renewal applicants who request it. The department may also provide continuing education training.

WAC 296-96-00916 Who approves and what is the process for becoming a continuing education course provider?

(1) The department approves continuing education course providers.

(2) The department will review and approve courses.

(a) All providers seeking course approval must submit the required information to the department on a form provided by the department.

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(b) The courses must be taught by instructors through continuing education providers; courses may include but are not limited to, association seminars and labor training programs.

(c) All instructors must be approved by the department and are exempt from the requirements of WAC 296-96-00912 (2)(b)(ii) with regard to his or her application for license renewal, provided that such applicant was qualified as an instructor at any time during the one year immediately preceding the scheduled date for such renewal and the instructor must teach two or more courses in the year preceding the renewal.

(d) All training courses must conform to and be based upon current standards and requirements governing the operation, construction, installation, alteration, inspection and repair of elevators and other conveyances.

(e) All course approval requests must include:

(i) A general description of the course, including its scope, the instructional materials to be used and the instructional methods to be followed;

(ii) A detailed course outline;

(iii) The name and qualifications of the course instructor(s);

(iv) The locations where the course will be taught;

(v) The days and hours the course will be offered; and

(vi) The specific fees associated with the course, as well as, the total cost of the course.

(f) Training courses will be approved for a two-year period.

(g) It is the responsibility of the provider to annually review and update its courses and to notify the department of any changes.

(h) The department may withdraw its approval of any training course if it determines the provider is no longer in compliance with the requirements of this chapter. If the department withdraws its approval of a training course, it will give the provider written notification of the withdrawal, specifying the reasons for its decision.

(i) Approved training providers must keep uniform records, for a period of ten years, of attendance of licensees and these records must be available for inspection by the department at its request. The provider must submit a list of names of the attendees to the department on or before thirty days after the date of the course being held. Approved training providers are responsible for the security of all attendance records and certificates of completion. Falsifying or knowingly allowing another to falsify attendance records or certificates of completion constitutes grounds for suspension or revocation of the approval required under this section.

WAC 296-96-00918 Who is exempt from the continuing education requirements?

The following individuals are exempt from continuing education requirements:

(1) A licensee who is unable to complete the continuing education course required under this section before the expiration of his or her license due to a temporary disability may apply for a waiver from the department. Application shall be made on a form provided by the department and signed under the penalty of perjury and accompanied by a certified statement from a competent physician attesting to the temporary disability. Upon the termination of the temporary disability, the licensee must submit to the department a certified statement from the same physician, if practicable,

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attesting to the termination of the temporary disability at which time a waiver sticker, valid for ninety days, must be issued to the licensee and affixed to his or her license.

The licensee can work during the time that a certified statement from the physician is submitted to the department. The licensee has ninety days from this date to take the required courses in order to renew his/her license. If the licensee has not taken the required courses on or before the ninetieth day from the date the certified statement was sent in to the department, he/she will no longer be able to perform work.

(2) Approved instructors under WAC 296-96-00916 with regard to his or her application for license renewal, provided that such applicant was qualified as an instructor at any time during the one year immediately preceding the scheduled date for such renewal and that the instructor must teach two or more courses in the year preceding the renewal.

WAC 296-96-00920 When and where are elevator licensing examinations held?

Examinations shall be held at locations and times when considered necessary by the department. The department will notify qualified applicants of the date, time, and location of the examination.

WAC 296-96-00922 What are the fees associated with licensing?

The following are the department's elevator license fees:

Type of Fee	Period Covered by Fee	Dollar Amount of Fee
Elevator contractor/mechanic application fee (not required for renewal of valid license)	Per application	$56.90
Elevator contractor/ mechanic examination fee	Per application	$171.20
Reciprocity application fee*	Per application	$56.90
Elevator mechanic license	2 years	$114.10
Elevator contractor license	2 years	$114.10
Temporary elevator mechanic license	30 days	$28.30
Elevator mechanic/contractor timely renewal fee**	2 years	$114.10
Elevator mechanic/contractor late renewal fee***	2 years	$228.40
Training provider application/renewal fee	2 years	$114.10
Continuing education course fee by approved training provider****	1 year	Not applicable
Replacement of any licenses		$17.00
Refund processing fee		$34.10

* Reciprocity application is only allowed for applicants who are applying for licensing based upon possession of a valid license that was obtained in state(s) with which the department has a reciprocity agreement.

** Renewals will be considered "timely" when the renewal application is received on or prior to the expiration date of the license.

*** Late renewal is for renewal applications received no later than ninety days after the expiration of the licenses. If the application is not received within ninety days from license expiration, the licensee must reapply and pass the competency examination.

**** This fee is paid directly to the continuing education training course provider approved by the department.

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WAC 296-96-00924 What procedures does the department follow when issuing a civil penalty for licensing violations?

(1) If the department determines that an individual has violated the licensing requirements of chapter 70.87 RCW or this chapter, the department may issue a civil penalty describing the reasons for the violation(s). The department may issue a civil penalty to:

(a) A person who is advertising, offering to do work or submitting a bid to perform conveyance work, or employing elevator mechanics and does not have a valid elevator contractor's license as required under chapter 70.87 RCW or this chapter; or

(b) An individual who is working under chapter 70.87 RCW or this chapter and does not have a valid elevator mechanic license.

(2) A person may appeal a civil penalty issued under chapter 70.87 RCW or this chapter.

WAC 296-96-00926 What are the civil (monetary) penalties for violating the licensing requirements of chapter 70.87 RCW or this chapter?

(1) A person cited for a violation under chapter 70.87 RCW or this chapter may be assessed a civil (monetary) penalty based upon the following schedule:

First Violation	$500.00
Each additional Violation	$500.00

(2) Each day a person, firm or company is in violation may be considered a separate violation.

(3) Each job site at which a person is in violation may be considered a separate violation.

(4) The department must serve notice by certified mail to a person for a violation of chapter 70.87 RCW or this chapter. A violation will be considered served on the date it is mailed to his or her last known address on record with the department.

WAC 296-96-00930 What if I owe outstanding final judgments to the department?

The department may deny renewal or application of, or suspend your license if you have an outstanding final judgment.

PART B-1 - PERMIT REGULATIONS AND FEES, PENALTIES AND INSPECTION TYPES FOR ALL CONVEYANCES

WAC 296-96-01000 What is the permit process for conveyances?

(1) Prior to construction, alteration, or relocation of any conveyance, the licensed elevator contractor shall:

(a) Submit an installation application to the department. See WAC 296-96-01010 through 296-96-01025.

(b) *Submit plans* to the department *for approval*. See WAC 296-96-01030.

EXCEPTION: Most alterations will not require plans.

(c) Post an approved *installation or alteration* permit *issued by* the department on the job site.

(i) The annual operating certificate is considered suspended once alteration work begins.

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(ii) The certificate shall not be reinstated until the alteration work is approved by an inspector employed by the department.

(d) Obtain and pass an inspection prior to placing the conveyance in service. See WAC 296-96-01035.

(e) Abstain from working without a permit or releasing the conveyance for use without the department's written permission. Failure to comply is a violation of this chapter and may result in civil penalties (WAC 296-96-01070 (1)(a)).

(2) The owner must obtain and renew an annual operating certificate for each conveyance that they own, except for residential conveyances. See WAC 296-96-01065.

(3) After initial purchase and inspection, private residence conveyance(s) do not require an annual operating certificate. However, annual inspections may be conducted upon request. See WAC 296-96-01045 for the permit process.

WAC 296-96-01005 When do I need and what are the steps in obtaining a permit?

(1) See WAC 296-96-01000 for the permit process.

(2) Construction and alteration permits are valid for one year from the date of issue. However, permits may be renewed if you:

(a) Apply for a renewal permit before your current permit expires;

(b) The department approves your request for a renewal permit; and

(c) You pay a $51.60 renewal fee to the department for each permit you renew;

(3) If your permit has expired you must reapply for a new permit.

(4) See WAC 296-96-01006 for work requiring a permit.

WAC 296-96-01006 What type of conveyance work requires permitting and inspection?

(1) All installations and relocation of conveyances requires permitting and inspection. All conveyance work must be performed by an elevator mechanic licensed to perform work in the appropriate category. (See WAC 296-96-00910.)

(2) All alterations require permitting, inspection, and must include but are not limited to:

(a) Items identified in ASME A17.1.

(b) Any conveyance work that requires the conveyance to be tested prior to being returned to service, including:

(i) The replacement or repair of any parts, the installation of which would require recalibration or testing (e.g., brakes, hydraulic valves and piping, safeties, door reopening devices, governors, communication systems, cab interiors, car/hall buttons, etc.); or

(ii) Work performed on components or equipment affecting or necessary for fire and life safety (e.g., cab interiors, systems associated with fire recall, etc.).

(3) Permits and fees are not required for normal function and necessary maintenance and repair performed with parts of equivalent materials, strength, and design or for any conveyance exempted by RCW 70.87.200.

Contact the department if you have any questions or need assistance determining if a permit and inspection are required.

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WAC 296-96-01008 Decommissioning a conveyance.

A licensed elevator mechanic working for a licensed elevator company must decommission the conveyance. If the elevator is the only one in the building and the owner/agent wants the conveyance decommissioned the owner/agent must obtain a letter of approval from the local building official.

Note: *Decommissioning is not dismantling or removing the conveyance.*

(1) A conveyance is considered to be in decommissioned status when:

(a) The power feed lines from the disconnect switch to the controller have been removed; and

(b) The traction elevator, dumbwaiter, or material lift suspension ropes have been removed, and if applicable, the counterweight rests at the bottom of the hoistway. The hoistway doors, except for the bottom landing, have been permanently barricaded or sealed in the closed position on the hoistway side; and

(c) A hydraulic elevator, dumbwaiter, or material lift car rests at the bottom of the hoistway; pressure piping has been disassembled and a section removed from the premises; hoistway doors except for the bottom landing have been permanently barricaded or sealed in the closed position on the hoistway side; suspension ropes have been removed and counterweights, if provided, landed at the bottom of the hoistway; and

(d) The escalator or moving walk entrances have been permanently barricaded.

(2) After decommissioning work is complete:

(a) The elevator mechanic must contact the department to schedule an inspection;

(b) The department will perform an inspection and send the results and applicable fee to the conveyance owner;

(c) Upon inspection and approval by the department, annual inspections will no longer be required, until such time that the conveyance is returned to service.

(3) If returning the conveyance to service and prior to operating the conveyance, an acceptance inspection and temporary operating permit must be obtained. The conveyance acceptance inspection shall be performed to the code in effect from the date of its original installation or alteration.

WAC 296-96-01009 Who can purchase a permit?

The department may only issue a permit for conveyance work to a licensed elevator contractor. Permits are only required for alterations, relocations and installations.

WAC 296-96-01010 What are the installation permit fees for conveyances, material lifts, and hoists and how are they calculated?

Installation permit fees are based on the total cost of the conveyance and the labor to install the conveyance. The following permit fees apply to the construction or relocation of all conveyances and material lifts:

TOTAL COST OF CONVEYANCE	FEE
$0 to and including $1,000. . . .	$56.90
$1,001 to and including $5,000. . . .	$85.40
$5,001 to and including $7,000. . . .	$142.60
$7,001 to and including $10,000. . . .	$171.20

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$10,001 to and including $15,000. . . .	$228.40
OVER $15,000. . . .	$319.80 plus
Each additional $1,000 or fraction thereof. . . .	$7.90

WAC 296-96-01012 What are the permit fees for alterations to conveyances, material lifts, and hoists and how are they calculated?

Permit fees are based on the total cost of the equipment, materials and labor to perform the alteration. The following permit fees apply to the alteration of all conveyances and material lifts:

TOTAL COST OF ALTERATION	FEE
$0 to and including $1,000. . . .	$56.90
$1,001 to and including $5,000. . . .	$85.40
$5,001 to and including $7,000. . . .	$142.60
$7,001 to and including $10,000. . . .	$171.20
$10,001 to and including $15,000. . . .	$228.40
OVER $15,000. . . .	$228.40
Each additional $1,000 or fraction thereof. . . .	$7.90

WAC 296-96-01025 What is the permit fee for personnel and material hoists?

The fee for each personnel hoist or material hoist installation is $228.40. See WAC 296-96-01035(2) for requirements for jumps.

Note: An operating certificate is also required for these types of conveyances.

WAC 296-96-01027 Are initial installation permit fees refundable?

Your initial installation permit fees are refundable if the installation work has not been performed, minus a processing fee, unless your permits have expired. No refunds will be issued for expired permits. All requests for refunds must be submitted in writing to the elevator section and must identify the specific permits and the reasons for which the refunds are requested.

The processing fee for each refund is. . . .$34.10

WAC 296-96-01030 What is the process for installation and alteration plan approval?

Prior to the start of construction, the applicant must submit to the department for approval two copies of plans for new installations or major alterations. To be approved, the plan must comply with the latest adopted edition of the American Society of Mechanical Engineers (ASME), the National Electrical Code (NEC) and applicable Washington Administrative Codes (WAC). In addition, the plans must include all information necessary in determining whether each installation/alteration complies with all applicable codes. The permit holder must keep a copy of the approved plan on the job site until the department has witnessed all acceptance tests. Any alterations to the approved plan must be submitted to the department for approval before a final inspection will be conducted. The nonrefundable fees for reviewing your plans are:

For each installation/major alteration. . . . $28.30

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If more than two sets of plans are submitted, the fee for each additional set. . . . $11.20

WAC 296-96-01035 Are there inspection fees?

Yes. The initial inspection(s) of a conveyance or for the initial inspection of construction, alteration or relocation of a conveyance is included with your permit fee. Once the department has approved the initial installation of the conveyance you will be issued a temporary operating certificate that is valid for 30 days. Prior to the expiration of the 30-day temporary operating certificate the application for an annual operating certificate and the appropriate fees must be paid to the department. Once the department has received the appropriate fees and application the owner will be issued the first annual operating certificate. The owner or owners' representative will receive an invoice from the department for renewal. The owner is required to renew the annual operating certificate yearly. The following inspections require an additional inspection fee:

(1) **Reinspection.** If a conveyance does not pass an initial inspection and an additional inspection is required, the fee for each reinspection of a conveyance is $114.10 per conveyance plus $55.40 per hour for each hour in addition to the first hour. The department may waive reinspection fees.

(2) **Inspecting increases in the height (jumping) of personnel and material hoists.** The fee for inspecting an increase in the height (jumping) of each personnel hoist or material hoist is $114.10 plus $56.90 per hour for each hour in addition to 2 hours. This fee is for inspections occurring during regular working hours. The permit holder may be allowed to operate a hoist prior to the jump inspection if:

(a) The electrical limits will not allow the lift to operate above the previously inspected landing.

(b) The state elevator inspector is contacted, agrees and can schedule within 3 days.

(3) **Variance inspections.**

(a) The fee for an on-site variance inspection is $171.20 per conveyance plus $56.90 per hour for each hour in addition to 2 hours. This fee is for inspections occurring during regular working hours.

(b) The fee for a variance that does not require an on-site inspection is $56.90 per conveyance. The individual requesting the variance must provide the department with pictures, documentation, or other information necessary for the department to review the variance. The department may conduct an on-site variance inspection to verify the information provided or if it determines that an inspection is necessary. If an on-site variance inspection is performed, the fees in (a) of this subsection will apply.

(4) **"Red tag" status fee.** The annual fee for a conveyance in "Red tag" status is $28.30.

Note: You must provide the department with written approval from the building official, indicating that the conveyance is not required for building occupancy, when you apply to have the conveyance placed in voluntary red tag status.

(5) **Decommission inspection.** The fee for performing a decommission inspection is $56.90. Once the decommission inspection has been performed and approved, the conveyance will no longer require annual inspections until such time that the conveyance is brought back into service. Prior to operating the conveyance, a new inspection and annual operating permit must be obtained.

(6) **Voluntary inspections by request.** The owner or potential purchaser of a building within the department's jurisdiction may request a voluntary inspection of a conveyance. The fee for this inspection will be $114.10 per conveyance and $56.90 per hour for each hour in addition to 2 hours plus the standard per diem and mileage allowance granted to

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department inspectors. The owner/potential purchaser requesting the voluntary inspection will not be subject to any penalties based on the inspector's findings.

WAC 296-96-01040 What is the fee for testing and inspecting regular elevators used as temporary elevators to provide transportation for construction personnel, tools, and materials only?

(1) The fee for the inspecting and testing of regular elevators used as temporary elevators is $91.20, in addition to any other fees required in this chapter. This fee purchases a 30-day temporary use permit that may be renewed at the department's discretion.

(2) When this temporary use permit is purchased, a notice declaring that the equipment has not received final approval from the department must be conspicuously posted in the elevator.

WAC 296-96-01045 What are the inspection requirements and fees for conveyances in private residences?

(1) Chapter 70.87 RCW requires the department to inspect all new, altered or relocated conveyances operated exclusively for single-family use in private residences. Prior to installation, a licensed elevator contractor must complete a permit application as described in WAC 296-96-01005 and pay the appropriate fee listed in WAC 296-96-01010.

(2) Chapter 70.87 RCW allows the department to inspect conveyances operated exclusively for single-family use in private residences when the department is investigating an accident or an alleged or apparent violation of the statute or these rules.

(3) No annual inspection and operating certificate is required for a private residence conveyance operated exclusively for single-family use unless the owner requests it. When an owner requests an inspection and an annual operating certificate, the following fee must be paid prior to an inspection:

TYPE OF CONVEYANCE	FEE
Each inclined stairway chair lift in private residence. . . .	$26.60
Each inclined wheel chair lift in a private residence. . . .	$26.60
Each vertical wheel chair lift in a private residence. . . .	$33.50
Each dumbwaiter in a private residence. . . .	$26.60
Each inclined elevator at a private residence. . . .	$94.90
Each private residence elevator. . . .	$61.10
Duplication of a lost, damaged or stolen operating permit. . . .	$11.20

WAC 296-96-01050 How do I get a supplemental inspection?

Any person, firm, corporation or governmental agency can request a supplemental inspection from the department by paying a fee of $68.40 per hour (including travel time) plus the standard per diem and mileage allowance granted to department inspectors. This fee is for inspections occurring during regular working hours.

WAC 296-96-01055 Are technical services available and what is the fee?

You may request elevator field technical services from the department by paying a fee of $68.40 per hour (including travel time) plus the standard per diem and mileage allowance granted to department inspectors. These field

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technical services may include code evaluation, code consultation, plan examination, code interpretation and clarification of technical data relating to the application of the department's conveyance rules. Field technical services do not include inspections.

WAC 296-96-01057 Does the department charge a fee to perform investigations and what is the fee?

An elevator inspector may charge at a rate of $68.40 per hour (including travel time) plus the standard per diem and mileage allowance granted to department inspectors. These services shall include accident investigation relating to any and all accidents. This fee would include an inspection as required during the accident investigation.

WAC 296-96-01060 Can I request an after-hours inspection and what is the fee?

You may request an inspection outside of normal business hours, which are 7:00 a.m. to 5:00 p.m., if an inspector is available and the inspection is authorized by the department. The minimum fee for an after-hours inspection is $85.40 and $85.40 per hour for each hour in addition to the first hour plus the standard per diem and mileage allowance granted to department inspectors. This fee is in addition to any other fees required for your project.

WAC 296-96-01065 What are the annual operating certificate fees?

An annual operating certificate will be issued to you upon payment of the appropriate fee. The owner of record will be invoiced by the department. If a change of owner has occurred, it is the new owner's responsibility to ensure the department has the corrected information. Below is the fee structure table:

TYPE OF CONVEYANCE	FEE
Each hydraulic elevator. . . .	$114.10
Each roped-hydraulic elevator. . . .	$142.60
plus for each hoistway opening in excess of two. . . .	$11.20
Each cable elevator. . . .	$142.60
plus for each hoistway opening in excess of two. . . .	$11.20
Each cable elevator traveling more than 25 feet without an opening—for each 25 foot traveled. . . .	$11.20
Each limited-use/limited-application (—LULA) elevator. . . .	$114.10
Each escalator. . . .	$94.80
Each dumbwaiter in other than a private residence. . . .	$61.10
Each material lift. . . .	$114.10
Each incline elevator in other than a private residence. . . .	$122.70
Each belt manlift. . . .	$114.10
Each stair lift in other than a private residence. . . .	$61.10
Each wheel chair lift in other than a private residence. . . .	$61.10
Each personnel hoist. . . .	$114.10

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Each grain elevator personnel lift. . . .	$94.80
Each material hoist. . . .	$114.10
Each special purpose elevator. . . .	$114.10
Each private residence elevator installed in other than a private residence. . . .	$114.10
Each casket lift. . . .	$94.80
Each sidewalk freight elevator. . . .	$94.80
Each hand-powered manlift or freight elevator. . . .	$64.20
Each boat launching elevator. . . .	$94.80
Each auto parking elevator. . . .	$94.80
Each moving walk. . . .	$94.80
Duplication of a damaged, lost or stolen operating permit. . . .	$11.20

WAC 296-96-01070 What are the civil (monetary) penalties for violating the conveyance permit and operation requirements of chapter 70.87 RCW and this chapter?

(1) Any licensee, installer, owner or operator of a conveyance who violates a provision of chapter 70.87 RCW or this chapter shall be subject to the following civil penalties:

(a) Operation of a conveyance without a permit *or written approval from the department*:

First violation. . . .	$171.20
Second violation. . . .	$342.60
Each additional violation. . . .	$500.00

(b) Installation of a conveyance without a permit:

First violation. . . .	$171.20
Second violation. . . .	$342.60
Each additional violation. . . .	$500.00

(c) Relocation of a conveyance without a permit:

First violation. . . .	$171.20
Second violation. . . .	$342.60
Each additional violation. . . .	$500.00

(d) Alteration of a conveyance without a permit:

First violation. . . .	$171.20
Second violation. . . .	$342.60
Each additional violation. . . .	$500.00

(e) (i) Operation of a conveyance for which the department has issued a red tag or has revoked or suspended an operating permit or operation of a decommissioned elevator. . . . $500.00

(ii) Removal of a red tag from a conveyance $500.00

(f) Failure to comply with a correction notice:

After 90 days. . . .	$114.10
After 180 days. . . .	$285.40

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After 270 days. . . .	$457.00
After 360 days. . . .	$500.00
Each 30 days after 360 days. . . .	$500.00

Note: Penalties are cumulative

(g) Failure to submit official written notification that all corrections have been completed:

After 90 days. . . .	$114.10
After 180 days. . . .	$285.40
After 270 days. . . .	$457.00
After 360 days. . . .	$500.00
Each 30 days after 360 days. . . .	$500.00

Note: Penalties are cumulative

(h) Failure to notify the department of each accident to a person requiring the services of a physician or resulting in a disability exceeding one day may result in a $500.00 penalty per day. The conveyance must be removed from service until the department authorizes the operation of the conveyance. This may require an inspection and the applicable fees will be applied. Failure to remove the conveyance from service may result in an additional $500.00 penalty per day. . . .$500.00 Plus WAC 296-96-01057

(i) Falsifying official written documentation submitted to the department. Each day is a separate violation. . . .$500.00

(2) A violation as described in subsection (1)(a), (b), (c), and (d) of this section will be a "second" or "additional" violation only if it occurs within one year of the first violation.

(3) The department must serve notice by certified mail to an installer, licensee, owner, or operator for a violation of chapter 70.87 RCW, or this chapter.

WAC 296-96-01075 How does an owner or licensee receive a variance from the installation and alteration requirements of chapter 70.87 RCW and this chapter?

Variances from the installation and alteration requirements of this chapter may be requested. The variance request shall be in writing on a form approved by the department accompanied with the required fee. The individual requesting the variance must provide the department with pictures, documentation, or other information necessary for the department to review the variance. The department may conduct an on-site variance inspection to verify the information provided or if it determines that an inspection is necessary. If an on-site variance inspection is performed, the fees in WAC 296-96-01035 will also apply.

PART C - REGULATIONS FOR NEW AND ALTERED ELEVATORS AND LIFTING DEVICES

NOTE: The following rules set the minimum standard for all new installations and, where applicable, alterations.

NOTE: Part C is not intended to replace the current adopted standards outlined in WAC 296-96-00650.

In conflicts between Part C and the adopted standards, Part C shall take precedent.

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WAC 296-96-02400 When must the department be notified for a new or altered inspection?

(1) The person or firm installing, relocating, or altering a conveyance shall notify the department in writing, at least seven days before requesting any inspection of the work, and shall subject the new, moved, or altered portions of the conveyance to the acceptance tests.

(2) The department may grant exceptions to this notice requirement.

WAC 296-96-02401 ASME A17.1-8.7.1 Alteration general requirements.

Alterations or replacement of new equipment to existing hoistway, machine room and machine space must follow the current rules for new elevators as related to location of equipment, motor controllers, motion controllers, drives, transformers, and other equipment as amended by this chapter.

WAC 296-96-02405 What is the inspection and approval process for alterations?

The following process must be followed when performing alterations:

(1) Obtain an alteration permit from the department prior to performing the alteration. The permit application must include detailed information on the scope of the alteration.

(2) Take the conveyance out-of-service and perform the alteration.

(3) If the conveyance requires an inspection prior to being returned to service (as identified on the alteration permit), you must contact the department to *schedule* an inspection *at least seven days in advance* and:

(a) *A licensed mechanic must be present and if* the conveyance passes the inspection, the conveyance may be placed back into service.

(b) If the conveyance fails the inspection, the conveyance must remain out-of-service until the corrections are made, *reinspection scheduled* and approved by the department.

(4) If the conveyance is not required to be inspected prior to being returned to service, you must contact the department immediately to *schedule* an inspection *within seven days and obtain written permission prior to returning the conveyance to service. A licensed mechanic must be present during the scheduled inspection* and:

(a) If the conveyance passes the inspection, the conveyance may remain in service.

(b) If the conveyance fails the inspection, the conveyance will be placed out-of-service until the corrections are made, *reinspection scheduled* and approved by the department.

WAC 296-96-02410 Are there additional work requirements when performing an alteration?

For certain types of alterations additional work may be required as part of the alteration and prior to approval of the conveyance. These alterations include, but are not limited to:

(1) Replacements of controllers will require the following:

(a) Firefighter service requirements must be in accordance with the most recent code adopted by the department *and include ASME A17.1-8.7.2.27.4(a) when travel is five feet or more above or below the designated landing*.

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(b) Seismic requirements *for* derailment and/or seismic switch as required must be met in accordance with the most recent code adopted by the department. In addition, the *conveyance* must operate according to *ASME* A17.1 seismic requirements.

(c) Lighting in the machine room and pit must comply with the most recent code adopted by the department.

(d) Electrical outlets in the machine room and pit must be of the ground fault interrupter type.

(2) Replacement of controllers and a car operating panel and/or hall fixtures:

(a) The requirements of subsection (1) of this section must be met.

(b) All panels and fixtures must meet the applicable (e.g., height, sound, Braille, etc.) requirements in accordance with this chapter.

(3) Replacement of door operators and/or door equipment: Any changes to these items require the installation of door restrictors.

(4) Hydraulic piping: Replacement or relocation of hydraulic piping *including a control valve* will require the installation of a rupture (overspeed) valve. *Gaskets and seals are excluded from this requirement.*

Note: The department may grant exceptions to the requirements identified in this section.

WAC 296-96-02411 ASME A17.1-8.7.2.13 Door reopening devices.

Where a reopening device for power-operated car doors or gates is altered, replaced or added, it is considered an alteration and the following requirements shall apply:

(1) Requirement 2.13.4;

(2) Requirement 2.13.5; and

(3) When firefighters' emergency operation is provided, door reopening devices and door closing on Phase I and Phase II shall comply with the requirements applicable at the time of installation of the firefighters' emergency operation.

WAC 296-96-02415 What are the conditions for obtaining a temporary construction operating permit?

(1) In order to obtain a permit: The elevator must at a minimum adhere to:

Note: See WAC 296-96-01040 for fees.

(a) ASME A17-1 Section 5.10 Elevators Used for Construction.

(b) A single means of disconnecting the elevator must be provided and related equipment must be identified by the use of numbers or letters on the disconnect, the controller, the drive machine, the cross head, and the car operating panel.

(c) The key operation of Phase I must recall the elevator.

(d) A means of emergency communication with the elevator must be provided. If there is no permanent method of emergency communication an operator with communication equipment must be provided.

(e) Tests shall be conducted according to A17.1-8.10.5.10 Elevators Used for Construction.

(f) Hydraulic elevators with less than four stops may not be issued a temporary construction operating permit unless preapproved by the department.

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(g) Elevator cab interiors must be completed. Temporary cabs may be used and walls must be covered with fire retardant materials.

(h) The elevator must pass load tests and safety circuit inspections.

(i) Temporary or permanent lights in the cab, machine room and at the landings must be provided.

(j) Machine rooms must be fully enclosed and have a lockable door.

(k) Hoistways must be fully enclosed.

(l) The elevator is for construction use only. Office furniture and goods used to stock the building are not to be considered construction work.

(2) The person operating the permitted conveyance under this section must be properly trained in operation and safety and:

(a) The operator, which may be one of your employees, must be on the elevator whenever it is in use.

(b) The operator must be designated to be the sole operator of the elevator.

(c) The operator must be trained in the proper operation of the elevator, the proper procedure to handle an emergency and must know who to contact in the event of an emergency involving the operation of the elevator.

(d) The operator must carry a means of two-way communication on his/her person at all times. (This may be in the form of a cellphone, walkie-talkie, etc., providing proper reception is obtainable at all times.)

WAC 296-96-02420 What are the requirements for temporary construction operating permits?

(1) A thirty-day temporary construction operating permit is for transportation of construction personnel and materials only, not for the transportation by the general public.

(2) Temporary construction operating permits are valid for thirty days.

(3) You must contact the department for a reinspection to renew the permit.

(4) All elevators with expired temporary construction operating permits that have not passed a final inspection may not be operated. Operating an elevator with an expired permit shall result in a civil penalty (see WAC 296-96-01070 (1)(a)).

(5) Renewal of a temporary operating permit is at the discretion of the department.

WAC 296-96-02421 Layout drawings.

Two sets of legible layout/plans must be submitted to the department, in addition to the layout criteria in ASME, include the following:

(1) A machine room plan identifying room dimensions, location of drive machine and motor controller, mainline disconnect, outlet, light switch, and door swing;

(2) A hoistway plan identifying hoistway and conveyance equipment dimensions and clearances, foot print of cab showing doors and inside cab dimensions, and location and dimensions of hoistway and cab door or gates;

(3) A hoistway elevation section identifying elevation of the hoistway and conveyance equipment dimensions and clearances, location of rail brackets, pit ladder, pit light, light switch, pit stop switch, top of car clearances, and on MRLs the height to the equipment from the horizontal plane of the top of the car with the car positioned at the top landing; and

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(4) Detail drawings identifying specific details of conveyance components: Rail bracket fastening, sill support and fastening, machine beams, entrance installation assembly, loads and reactions, and additional seismic requirements (when required by building code).

General conveyance data includes:

(a) Conveyance type (model) and capacity;

(b) Location number (within building);

(c) Up/down full load speed;

(d) Car enclosure (construction material);

(e) Door type and manufacturer (single speed, two-speed, center opening, RH/LH opening);

(f) Platform thickness;

(g) Finish floor (tile, carpet);

(h) Power unit/drive motor (manufacturer and HP);

(i) Power requirements;

(j) Equipment heat generation (BTU) (Items (k)-(o) are applicable to hydraulic);

(k) Jack model;

(l) Plunger O.D. (if telescoping O.D. of each section);

(m) Plunger wall thickness;

(n) Cylinder O.D.;

(o) Cylinder wall thickness (items (p)-(u) are applicable to roped-hydraulic and electric);

(p) Size and number of hoist ropes;

(q) Roping type (1:1, 2:1, underslung);

(r) Governor location;

(s) Governor rope size and number;

(t) Safety manufacture and type;

(u) Emergency brake manufacture and type;

(v) Care buffer type and stroke;

(w) CWT buffer type, impact, and stroke; and

(x) Top/bottom runby.

WAC 296-96-02425 Where is a shut-off valve required for hydraulic elevators? Two shut-off valves may be required.

(1) ASME requires that a shut-off valve be installed in the machine room.

(2) When the pit is lower than the machine, a shut-off valve must be installed in the pit.

(3) A separate shut-off valve is not required in the pit for hydraulic elevators equipped with a safety/rupture valve that rotates no more than 180 degrees to stop the flow of hydraulic fluid and has a safety shut-off handle capable of being grasped.

EXCEPTION: Limited use/limited application (LULA), special purpose and residential elevators are exempt from this section.

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WAC 296-96-02450 Can pipes and ducts be installed above a machine room?

Electric conduit and ducts may be installed in the upper space ("upper space" is defined as the space above the fire-rated ceiling) of the elevator machine room as long as they are installed above the required seven-foot clearance and they do not interfere with the elevator equipment which also must be installed to allow a seven-foot clear head room.

(1) Straight through runs of electrical conduit without junction boxes can be installed in this space.

(2) Pipes and ducts conveying gases, vapor, or liquids may be installed in the space above the machine room provided they are encased in a noncombustible secondary pipe without joints, or a moisture barrier without penetration.

EXCEPTION: Residential elevators are exempt from this section.

WAC 296-96-02451 When a control space is used in lieu of a machine room.

(1) The control space cannot be located where the entrance to the space is accessible to the public.

Note: *For elevators, a control space may be approved on a limited case-by-case basis and should not be considered a normal installation process.*

(2) The space must be designed to prevent full bodily entry with the door closed.

(3) The control space shall not open into:

(a) Hazardous locations;

(b) The outside environment when exposed on any side, top or bottom; and

(c) A space that is not environmentally controlled to maintain the elevator within the manufacturer's recommended temperature and humidity levels.

(4) Barricaded control space must be free of areas containing piping conveying liquid, vapor, or gas.

(5) If metal access doors are used, proper electrical clearances must be provided per the National Electrical Code.

(6) The space must have full environmental control as required by a machine room.

(7) Barricades must be:

(a) Minimum depth equal to forty-eight inches from the controller cabinet door to barricade;

(b) Minimum width equal to thirty-two inches and shall be the full width of the access opening;

(c) Minimum height equal to six feet;

(d) Minimum material equal to nonconductive rating;

(e) Permanently affixed to the inside door or jamb as to not be removed from the space;

(f) Constructed to withstand a force of two hundred fifty pounds of pressure applied in any direction without deflecting more than one-half inch (may require a floor mount when attached only to the door to meet deflection requirements);

(g) Provided with signage, "if you leave this area, you must replace guards and close doors." The minimum height of lettering shall be one inch.

(8) The control space shall be fire rated equivalent to the International Building Code, chapter 30.

WAC 296-96-02452 Machines, beams and hitch supports must meet the following requirements.

When the machine space is provided inside the hoistway:

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(1) The machine and overhead sheaves cannot be located more than six feet six inches from the horizontal plane of the cartop.

(2) The cartop inspection shall not operate past the normal terminal stopping device.

Note: *Where access is greater than six feet six inches (see WAC 296-96-23115).*

WAC 296-96-02455 What is the minimum working space required in machine rooms/control rooms?

(1) In machine rooms with equipment requiring maintenance and inspection, an eighteen-inch working space must be established.

(2) There must be a minimum of eighteen inches working space (other than the required controller panel clearances) on one of the four sides of the hydraulic tank.

(3) The requirements in subsections (1) and (2) of this section do not supersede NFPA 70.

(4) The side with the hydraulic outlet pipe is not considered usable working space.

WAC 296-96-02460 What are the requirements for electrical main line disconnects?

(1) The main line disconnect switch(es) or circuit breaker must be located *per NEC 620.51(c) and*:

(a) Inside the machine room door on the lock jamb side of the machine room door;

(b) Not more than twenty-four inches from the jamb to the operating handle; and

(c) Be at a height not *less than thirty-six inches and not* more than sixty-six inches above the finish floor *as measured centerline to the disconnect handle.*

(2) For multicar machine rooms the switches shall be grouped together as close as possible to that location.

(3) For machine rooms with double swing doors, the doors must swing out and the switch(es) must be on the wall adjacent to the hinge side of the active door panel.

(4) The switch(es) must be designed so that they may be locked out and tagged in the open position.

EXCEPTION: Special purpose and residential inclined elevators are exempt from this section.

WAC 296-96-02465 What are the requirements associated with elevator machine rooms?

(1) Panels or doors for the purpose of accessing nonelevator equipment are not permitted in elevator machine rooms. Passage through the machine room may not be used to gain access to other parts of the building that do not contain elevator equipment.

(2) The lighting control switch must be located inside the machine room within twenty-four inches of the lock jamb side of the machine room door.

(3) Cooling or venting of the elevator machine room shall be to the present building code adopted by the state.

Machinery spaces, machine rooms, control spaces, and control rooms that contain solid-state equipment for elevator operation shall be provided with an independent ventilation or air-conditioning system to protect against the overheating of the electrical equipment. Ventilation systems shall use outdoor makeup air. The system shall service the equipment space only, and shall be capable of maintaining the temperature and humidity within the range established by the manufacturer's specifications. Where no manufacturer specifications are available, the equipment space temperature shall be maintained at no less than fifty-five degrees Fahrenheit and no more than ninety degrees Fahrenheit.

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The cooling load for the equipment shall include the BTU output of the elevator operation equipment as specified by the manufacturer based on one hour of continuous operation. The outdoor design temperature for ventilation shall be from the 0.5 percent column for summer from the Puget Sound Chapter of ASHRAE publication "*Recommended Outdoor Design Temperatures, Washington State*." The following formula shall be used to calculate flow rate for ventilation:

CFM = BTU output of elevator machine room equipment/[1.08 x (acceptable machine room temp - makeup air temp from the ASHRAE publication)]

EXCEPTION: For buildings four stories or less, natural or mechanical means may be used in lieu of an independent ventilation or air-conditioning system to keep the equipment space ambient air temperature and humidity in the range specified by the elevator equipment manufacturer.

(4) A thermostat must be provided in the elevator machine room to control the temperature.

(5) Where no specifications are available, the machine room temperature shall be maintained at no less than fifty-five degrees Fahrenheit and no more than one hundred degrees Fahrenheit.

(6) When standby power is connected to the elevators, the machine room ventilation or air conditioning system shall be connected to the standby power.

(7) If the air conditioner is mounted overhead, seven feet of headroom clearance must be provided from the underside of the unit to the machine room floor.

(8) If ventilation is used, it must not exhaust air into other parts of the building.

(9) Machine rooms located in underground parking garages must have a means to exchange the air in the machine room. An "exchange of air" is completed through separate intake and exhaust systems.

EXCEPTION: The air in an underground parking garage machine room can be exchanged directly into the parking garage area.

(10) All elevators that are provided with remote elevator machine and/or control rooms must be provided with a permanent means of communication between the elevator car and the remote machine room and/or control room.

(11) Elevator machine room doors must have signs with lettering at least 1.25 inch in height with "elevator equipment room authorized personnel only - no storage."

EXCEPTION: Residential conveyances, LULAs and special purpose elevators are exempted from these requirements.

WAC 296-96-02466 ASME A17.1-8.9 Code data plate location and material.

(1) An individual data plate shall be provided and maintained for each unit (see 1.1.1). The data plate shall indicate:

(a) Code to be used for inspections and tests (see 8.10.1.2);

(b) Code and edition in effect at the time of installation; and

(c) Code in effect at the time of any alteration and indicate the applicable requirements of 8.7, including reference number.

(2) The data plate shall be of such material and construction that the letters and figures stamped, etched or cast to the face shall remain permanently and readily legible. The height of the letters and figures shall be not less than 3.2 millimeters (0.125 inches).

(3) All data plates shall be provided with either of the additional requirements listed in 8.9.3 (a) or (b).

Fire Service, Sprinklers, Sprinkler Pipes, Shunt Trip

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WAC 296-96-02470 What are the requirements for Fireman's Service Phase I and Phase II recall?

Devices for deactivating recall must be in the line of sight of the elevator; be secure from tampering; and must be accessible to fire, inspection, and elevator service personnel only. Owner-designated patient express and emergency hospital service elevators may have a manual control in the car for use by authorized patient care personnel. When activated, it shall preclude Phase I recall.

The illuminated visual signal in the car that indicates when Phase I Emergency Recall Operation is in effect must stay illuminated until the car is taken off Phase I operation.

Once the car returns to the designated landing on Phase I recall and the doors have reached their full open position, the buzzer must be silenced within ten seconds.

Groups of elevators containing four or more cars shall be provided with two, three-position key switches per group. For purposes of this section, a group shall be defined as all elevators serving the same portion of a building. Hall call buttons common to a group will remain in service unless both Phase I recall switches of a four car or larger group are placed in the recall mode or a fire alarm recall signal is initiated.

EXCEPTION: Limited use/limited application (LULA), special purpose, and residential elevators are exempt from this section.

WAC 296-96-02471 ASME A17.1-2.27.8 FEO-K1 Fire service keys.

The key switches required by ASME A17.1-2.27.2 through 2.27.5 for all new and altered elevators in a building shall be operable by the FEO-K1 key. The keys shall be Group 3 Security (see ASME A17.1-8.1). A separate key shall be provided for each switch. This key shall be of a tubular, 7 pin, style 137 construction and shall have a bitting code of 6143521 starting at the tab sequences clockwise as viewed from the barrel end of the key. The key shall be coded "FEO-K1." The possession of the "FEO-K1" key shall be limited to elevator personnel, emergency personnel, elevator equipment manufacturers, and authorized personnel during checking of firefighters emergency operation.

Note: *(ASME A17.1-2.27.8) Local fire or building authorities may specify the requirements for a uniform keyed lock box and its location to contain the necessary keys. Where required, a lock box, including its lock and other components, shall conform to the requirements of UL 1037 (see Part 9). These keys shall be kept on the premises in a location readily accessible to firefighters and emergency personnel, but not where they are available to the public.*

WAC 296-96-02475 What are the requirements for sprinklers in hoistways and machine rooms?

(1) The machine room sprinkler piping must terminate in the machine room. The sprinkler piping must not run through the machine room to other spaces.

(2) The hoistway must not be used to supply sprinkler piping to more than one floor.

(3) The pit will be considered as a floor level.

(4) Sprinkler heads at the top of the shaft must terminate in the shaft. The sprinkler must not run through the hoistway to other spaces. ("Other spaces" includes the machine room.)

(5) All risers and returns must be located outside of the hoistway and machine room.

(6) See requirements in ASME A17.1.

(7) If a sprinkler system is added to an existing installation, the conveyance will be required to:

(a) Install shunt trip per WAC 296-96-02480.

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(b) If the conveyance was permitted to install on or after 1/1/1989 (A17.1-1987 code), then the fire service must operate to the code enforced per the original installation permit. A controller alteration will require fire and sprinkler system installation to the current adopted code.

(c) If the permit is prior to 12/31/1988, the fire service shall operate per current adopted standard in effect at the time of the alteration permit. (See A17.1-2.27.3.)

WAC 296-96-02480 How does the department enforce ASME requirements for sprinklers, smoke detectors, and heat detectors in hoistways and machine rooms?

ASME A17.1-2.8.2.3.2 states: "Means shall be provided to automatically disconnect the mainline power supply to the affected elevator upon or prior to the application of water from sprinklers located in the machine room or in the hoistway more than 600 mm (24 inches) above the pit floor. This means shall be independent of the elevator control and shall not be self-resetting. The activation of sprinklers outside the hoistway or machine room shall not disconnect the main line power supply." This section applies to both new and altered elevators when sprinklers have been installed in the elevator machine room and/or hoistway.

(1) The department enforces this rule as follows:

(a) When sprinkler systems are installed in an elevator hoistway, fixed temperature heat detectors set only at one hundred thirty-five degrees Fahrenheit must be located at the top of the hoistway. If sprinklers are installed in the machine room, the same rule applies to heat detectors in the machine room. If heat detectors are installed, they must be no more than eighteen inches from the sprinkler and in accordance with NFPA must also be installed for elevator recall. The purpose of the heat detector is to automatically disconnect mainline power to the elevator before water flows from any sprinkler associated with the elevator system.

(b) Activation of a smoke detector or other department approved initiating device at the top of the hoistway shall cause all elevators having any equipment in that hoistway, and any associated elevators of a group automatic operation, to be returned nonstop to the designated level.

(c) Heat detectors must be:

(i) Located within eighteen inches of each sprinkler head, as required by the local building official, or as required by NFPA 13.

(ii) Ceiling mounted. However, pit detectors, if installed, may only be used as a signaling device and wall-mounted if they are so designed.

(iii) Heat detectors are not required in pits provided the automatic sprinkler heads are installed in such a way that the water spray pattern does not spray higher than three feet above the pit floor with a spray pattern directed level and down.

(d) The shunt trip disconnect must be installed in the machine room or machinery space and it must be easily identifiable.

(e) Power for the automatic disconnect control circuit.

(i) Must be derived from a one hundred twenty volt separate branch circuit. Circuit location must be identified on or next to the elevator disconnects; and

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(ii) An illuminated visual device must be installed in the machine room adjacent to each elevator's disconnect. The purpose of this visual device is to indicate that power is available to the shunt trip activation mechanism; or

(iii) The department will allow disconnects that are labeled and listed to have built-in circuits that transform the power for the shunt trip device. This must be a one hundred twenty volt supply to the device. The shunt trip device must initiate shunt trip of the main line, not the fire panel. There must be an illuminated visual device incorporated on the disconnect switch that identifies that power is available to the shunt trip device.

(f) All electrical equipment and wiring associated with shunt trip devices must conform to the applicable ANSI/NFPA 70.

(g) The department does not require sprinkler shut-off valves. However, where they are installed, they must be located in an accessible place outside the hoistway, machine room or machinery space with their handles placed at no more than six feet above the floor.

(h) Emergency return units must be disabled when the shunt trip is activated.

(2) Alternative methods used to achieve ASME A17.1-2.8.2.3.2 must be approved by the department prior to installation.

EXCEPTION: Limited use/limited application (LULA), special purpose, and residential elevators are exempt from this section.

WAC 296-96-02481 Sprinklers and shunt trip within the city limits of Seattle.

Within the city limits of Seattle application of water will be manually controlled and elevator shut down will be installed per the current code adopted by the city of Seattle elevator section.

Car(s)

WAC 296-96-02485 What is required for emergency escape hatches?

Emergency escape hatches must be hinged and secured from the car top so that the cover opens from the top of the car only. The hatch must be able to be opened without the use of tools.

EXCEPTION: Machine roomless elevators are exempt from this requirement. They must be locked from inside the car and provide the key in the elevator lock box.

WAC 296-96-02486 ASME A17.1-5.7.10.5 Special purpose elevator car doors or gates.

Interlocks or a combination consisting of mechanical locks and electric contacts must be provided for all elevators having car doors. An electrical/mechanical interlock must be provided on car gates on elevators in unenclosed hoistways unless a safe means of self-evacuation is provided. Such means must be approved by the department.

WAC 296-96-02490 Are there exceptions for correction facility elevators?

Facilities that require special consideration to ensure the safety of security personnel and to prevent escapes must meet the relevant requirements of ASME A17.1, except that accessible "in-car" stop switches and signaling devices are not required when the elevator operation is:

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(1) Continually monitored by audio-visual equipment.

(2) Remotely controlled from a single location.

(3) Controls necessary for an elevator's operation may be located inside a car when the operating panel has a locked cover.

WAC 296-96-02495 Are self-leveling devices required?

Automatic elevators must be equipped with a self-leveling device. Each car shall be equipped with a self-leveling feature that will automatically bring and maintain the car at floor landings within a tolerance of one-half inch (13 mm) under rated loading to zero loading conditions.

WAC 296-96-02500 Is a door reopening device required on automatic-closing car doors?

Elevator doors shall be provided with a reopening device that shall stop and reopen a car door and hoistway door automatically if the door becomes obstructed by an object or person.

The reopening device shall be activated by sensing an obstruction passing through the opening at five inches (125 mm) nominal and twenty-nine inches (735 mm) nominal above the floor.

The reopening device shall not require physical contact to be activated, although contact shall be permitted before the door reverses.

The reopening device shall remain effective for twenty seconds minimum.

EXCEPTION: Special purpose and residential elevators are exempt from this section.

WAC 296-96-02505 What is the minimum acceptable initial transfer time for an elevator door?

The minimum acceptable time from notification that a car is answering a call until the doors of that car start to close shall be calculated from the following equation:

T = *D/1.5 ft* or T = D/(455 mm) = 5 seconds minimum, where T equals the total time in seconds and D equals the distance (in feet or millimeters) from the point in the lobby or corridor 60 inches (1525 mm) directly in front of the farthest call button controlling that car to the centerline of its hoistway door.

EXCEPTION: For car with in car lanterns, T shall be permitted to begin when the signal is visible from the point sixty inches directly in front of the furthest hall call button and the audible signal is sounded.

Elevator doors shall remain fully open in response to a car call for three seconds minimum.

EXCEPTION: Special purpose and residential elevators are exempt.
EXCEPTION: Limited use/limited application (LULA), special purpose, and residential elevators are exempt from this section.

WAC 296-96-02510 What are the minimum cab size and other applicable requirements for car interiors?

(1) All car interiors must be constructed to allow wheelchair users to enter the car, to maneuver within reach of the control panel and to exit the car.

(2) Minimum door width must be thirty-six inches.

(3) Minimum cab depth:

(a) From the rear wall to the return panel must be fifty-one inches; and

(b) From the rear wall to the inside face of the cab door must be fifty-four inches.

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(4) For cabs with side-opening doors, the minimum cab width is sixty-eight inches;

(5) For cabs with center-opening doors, the minimum cab width is eighty inches;

(6) Maximum clearance between a car platform sill and the edge of a hoistway landing sill must be 1-1/4 inch; and

(7) If the building official having jurisdiction determines the elevator must comply with accessibility requirements, the elevator must comply with subsections (1) through (6) of this section.

Note: See IBC for stretcher requirements for building four stories or more. Written prior approval from the local building/fire official must be obtained to reduce these requirements.

EXCEPTION: Elevators located in existing school buildings or other buildings specifically identified by local authorities may have a minimum clear distance between walls or between a wall and the door, including the return panel, of 54 inches, and a minimum distance from the wall to the return panel of 51 inches.

EXCEPTION: LULA, special purpose, and residential elevators must meet the specifications in ASME A17.1 pertaining to car size.

WAC 296-96-02515 What is required for car controls?

(1) Car controls shall be located within one of the reach ranges specified in ANSI 117.1 section 308. In no instance shall the car call buttons or other device(s) used in addition to or in lieu of, be lower than thirty-six inches from the cab floor height.

EXEMPTION: Where the elevator panel serves more than sixteen openings and a parallel approach to the controls is provided, buttons with floor designations shall be permitted to be fifty-four inches maximum above the floor.

(2) Elevator car call sequential step scanning shall be provided where car control buttons are provided more than forty-eight inches above the floor.

(3) Floor selection shall be accomplished by applying momentary or constant pressure to the up or down scan button. The up scan button shall sequentially select floors above the current floor. The down scan button shall sequentially select floors above the current floor. When pressure is removed from the up and down scan button for more than two seconds, the last floor selected shall be registered as a car call. The up and down scan button shall be located adjacent to or immediately above the emergency control buttons. (new requirement)

(4) Car control buttons with floor designations shall be raised or flush.

(5) Buttons shall be three-fourth inch minimum in their smallest dimension.

(6) Buttons shall be arranged with numbers in ascending order. When two or more columns of buttons are provided they shall read from left to right.

(7) Control buttons shall be identified by tactile characters complying with ANSI 117.1 section 703.

(8) Tactile characters and Braille designations shall be placed immediately to the left of the control button to which the designations apply.

(9) Car control keypads shall be a standard telephone keypad arrangement.

(10) Keypads shall be identified by visual characters complying with ANSI A117.1 and shall be centered on the keypad button. The number five key shall have a single raised dot.

(11) The dot shall have a base diameter of 0.188 inch minimum to 0.120 inch maximum, and a height of 0.025 inch minimum and 0.037 inch maximum.

(12) Emergency controls shall have their centerlines thirty-five inches minimum above the floor.

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(13) Emergency controls including the emergency alarm shall be grouped at the bottom of the panel.

(14) The control buttons for emergency stop, alarm, door open, door close, main entry floor, and phone shall be tactile symbols. Per ANSI table 407.4.7.1.3.

(15) Buttons with floor designations shall be provided with visible indicators to show that a call has been registered. The visible indicator shall extinguish when the car arrives at the designated floor.

EXEMPTION: Special purpose and residential elevators are exempt from this section.

WAC 296-96-02520 What are the location and operation requirements for car position indicators in the car?

(1) Audible and visible car position indicators shall be provided in elevator cars. Visible indicator characters shall be one-half inch minimum in height.

(2) Indicators shall be located above the car control panel or above the door.

(3) As the car passed the floor and when a car stops at a floor served by the elevator, the corresponding character shall illuminate.

(4) The signal shall be an automatic verbal annunciator that announces the floor at which the car is about to stop. The verbal announcement indicating the floor shall be completed prior to the initiation of door opening.

EXCEPTION: For elevators other than destination-oriented elevators that have a rated speed of two hundred feet per minute or less, a nonverbal audible signal with a frequency of 1500 Hz maximum that sounds as the car passes or is about to stop at a floor served by the elevator shall be permitted.

(5) The verbal annunciator shall be ten dBA minimum above ambient, but shall not exceed eighty dBA, measured at the annunciator.

(6) The verbal annunciator shall have a frequency of 300 Hz minimum and 3000 Hz maximum.

(7) Nonverbal audible annunciators must be at least twenty decibels with a frequency no higher than 1500 Hz.

EXCEPTION: Special purpose and residential elevators are exempt from this section.

WAC 296-96-02525 What is required for installation and operation of emergency communication systems?

Every elevator must contain an emergency two-way communication system. The installation and operation of this emergency communication system must comply with the ASME A17.1 code in effect when the department issued the elevator's installation permit. In addition to the appropriate ASME A17.1 code, the following requirements apply:

(1) The communication device located in the elevator car must comply with the following:

(a) The maximum height of any operable part of the communication system is forty-eight inches above the floor.

(b) Raised symbols and letters must identify the communication system. These symbols and letters must be located adjacent to the communication device. The characters used must be:

(i) At least 5/8 inches but no more than two inches high;

(ii) Raised 1/32 inch;

(iii) Upper case;

(iv) Sans serif or simple serif type; and

(v) Accompanied by Grade 2 Braille.

(c) If the system is located in a closed compartment, opening the door to the compartment must:

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(i) Require the use of only one hand without tight grasping, pinching, or twisting of the wrist; and

(ii) Require a maximum force of five pounds.

(d) The emergency communication system must not be based solely upon voice communication since voice-only systems are inaccessible to people with speech or hearing impairments. An indicator light must be visible when the telephone is activated. This nonverbal means must enable the message recipient to determine the elevator's location address and, when more than one elevator is installed, the elevator's number.

(e) The emergency communication system must use a line that is capable of communicating with and signaling to a person or service that can respond appropriately to the emergency at all times.

(2) A communication device *(intercom), if required by ASME A17.1*, must be installed in the lobby adjacent to the Phase I key switch. This device must be a two-way communication device used to communicate with individuals in the elevator.

(a) The height of any communication device(s) located in the lobby must be located between forty-eight and sixty inches above the floor.

(b) Additional communication device(s) may also be located in other parts of the building in addition to the one located in the lobby.

(c) ASME A17.1-2.27.1.1.6(a) The two way voice communication (intercom) within the building is not required to meet the telephone operability verification requirements if the connections are hardwired.

EXCEPTION: Elevators that have less than sixty feet of travel do not require an intercom.

(3) Subsections (1) and (2) of this section do not apply to special purpose elevators. However, residential and special purpose elevators must have a means of communication located inside the elevator cab. This communication device must be *permanently installed and* available at all times. *Cell phones and radios do not meet this requirement*.

EXCEPTION: Residential inclined elevators are exempt from this section.

WAC 296-96-02530 What requirements apply to the size and location of car handrails?

A handrail must provide coverage lengthwise at least ninety percent from wall to wall.

(1) A handrail must be installed on all car walls not used for normal exits. The handrails must be:

(a) Attached to the wall at a height of between thirty-two and thirty-five inches from the floor *to the top of the handrail*;

(b) Attached to the wall with a 1-1/2 inch space between the wall and the rail;

(c) Constructed with the hand grip portion not less than 1-1/4 inches but not more than two inches wide;

(d) Constructed with a cross-section shape that is substantially oval or round;

(e) Constructed with smooth surfaces and no sharp corners. Approaching handrail ends on a blank wall in the interior corners of a car do not have to return to the wall. However, if the handrail is located on the closing door wall of a single-slide or two-speed entrance elevator and it projects an abrupt end towards people entering the car, the handrail end must return to the wall.

(2) Residential elevators must have at least one handrail. The handrail must be installed on a car wall not used for normal exits.

EXCEPTION: Special purpose elevators are exempt from this section.

DRAFT future suggested language

WAC 296-96-02535 What requirements apply to floor designations on elevator door jambs?

(1) Floor designations shall be provided in tactile characters complying with ANSI A117.1 section 703.3 located on both jambs of elevator hoistway entrances.

(2) Tactile characters must be two inches minimum in height.

(3) A tactile star shall be provided on both jambs at the main entry level.

(4) Tactile characters shall be raised 1/32 inch minimum above their background.

(5) Characters shall be uppercase.

(6) Characters shall not be italic, oblique, script, highly decorative, or other unusual forms.

(7) Characters and their background shall have a nonglare finish.

(8) Characters shall contrast with their background with either light characters on a dark background or dark characters on a light background.

(9) Braille shall be contracted Grade 2 Braille and comply with ANSI A117.1 section 703.4.

(10) Braille shall be forty-eight inches minimum and sixty inches maximum above the floor, measured to the base line of the Braille cells.

(11) Characters shall be permanently attached (meaning tools required to remove).

Note: See ASNI A117.1 for a complete list of requirements.
EXCEPTION: Special purpose and residential elevators are exempt from this section.

WAC 296-96-02540 What are the installation and operation requirements for hall buttons?

(1) A clear floor space complying with ANSI A117.1 section 305 shall be provided at call controls.

(2) Objects beneath hall call buttons shall protrude one inch maximum.

(3) Call buttons and keypads shall be located within one of the reach ranges specified in ANSI A117.1 section 308 measured to the centerline of the highest operable part. In no instance shall they be lower than thirty-six inches.

(4) Call buttons shall be raised or flush.

(5) Call buttons shall be 3/4 inch minimum in the smallest dimension.

(6) The call button that designates the up direction shall be located above the call button that designates the down direction.

(7) Call buttons shall have visible signals to indicate when each call is registered and when each call is answered.

EXCEPTION: Special purpose and residential elevators are exempt from this section.

WAC 296-96-02545 What are the requirements for installation and operation of hall lanterns?

(1) A visible and audible signal shall be provided at each hoistway entrance to indicate which car is answering a call and the car's direction of travel. Where in-car signals are provided, they shall be visible from the floor area adjacent to the hall call buttons.

(2) Visible signal fixtures shall be centered at seventy-two inches minimum above the floor. The visible signal elements shall be 2-1/2 inches minimum measured along the vertical centerline of the element. Signals shall be visible from the floor area adjacent to the hall call button.

(3) Audible signals shall sound once for the up direction and twice for the down direction, or shall have verbal annunciators that indicate the direction of elevator car travel.

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(4) Audible signals shall have a frequency of 1500 Hz maximum. Verbal annunciators shall have a frequency of 300 Hz minimum and 3000 Hz maximum.

(5) The audible signal or verbal signal annunciator shall be 10 dBZ minimum above ambient, but shall not exceed 80 dBA, measured at the call button.

Hoistway and Pit

WAC 296-96-02550 ASME A17.1-3.18.3.8.3 and ASME A17.1-8.7.3.23.1—What are the requirements for underground hydraulic elevator pipes, fittings, and cylinders?

All newly installed underground pressure cylinders and pipes containing hydraulic elevator fluids shall be encased in an outer plastic containment.

(1) The plastic casing shall be constructed of polyethylene or polyvinyl chloride (PVC). The plastic pipe wall thickness must not be less than 0.125 inches (3.175 mm). The casing shall be capped at the bottom and all joints must be solvent or heat welded.

(a) The casing shall be sealed and dry around hydraulic pipe and cylinder to contain any leakage into the ground and to prevent electrolysis to the hydraulic pipe and the cylinder. Dry sand may be used to stabilize the hydraulic cylinder.

(b) A one-half inch pipe nipple with a one-way check valve shall be located between the casing and cylinder for monitoring purposes.

(c) Alternate methods must receive approval from the department prior to installation.

(d) This rule shall apply to all conveyances with installation permits issued by the department on or after 01/01/1993.

(2) ASME A17.1-3.18.2.2 Plunger design. Plungers shall be made of steel and shall be designed and constructed in compliance with the applicable formula in ASME A17.1-8.2.8.1 for calculation of elastic stability, bending, and external pressure. Plungers subject to internal pressure shall also be designed and constructed in accordance with cylinder design formula in ASME A17.1-8.2.8.2.

WAC 296-96-02551 ASME A17.1-2.6 and ASME A17.1-8.7.2.6 Protection of spaces below hoistways.

Shall meet the requirements in WAC 296-96-23140.

WAC 296-96-02552 Location of equipment in hoistway.

(1) Motor controllers, motion controller, drive, hydraulic control valves, hydraulic reservoir (tank), and hydraulic pump motor shall not be located in the hoistway or pit.

(2) Elevator controls and machinery other than driving machines, hydraulic cylinder, piston, governor, and their components shall be located in a room dedicated exclusively to elevator equipment.

(3) Drive sheaves, deflector sheaves, machine parts and supports are permitted to project into the hoistway.

(4) Driving machines shall not be located in the pit.

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WAC 296-96-02555 What are the requirements for accessing elevated elevator pit equipment?

Where elevated pit equipment requires assisted vertical access of more than five feet, a permanent noncombustible working platform shall be provided. Access to the platform must be by a fixed ladder or stair conforming to ANSI A14.3. The platform shall be of sufficient strength to support personnel and may be of open grillwork.

In residential installations where the pit depth exceeds three feet, a fixed vertical ladder, designed to the current adopted rules for commercial installations, must be provided.

WAC 296-96-02556 Minimum width, clearances, and access of pit ladders.

(1) ASME A17.1-2.2.4.2.2 The ladder rungs, cleats, or steps shall be a minimum of four hundred millimeters (sixteen inches) wide. When obstructions are encountered, the width may be permitted to be decreased to less than four hundred millimeters (sixteen inches). The reduced width shall be as wide as the available space permits, but not less than three hundred five millimeters (twelve inches).

(2) ASME A17.1-2.2.4.2.4 A clear distance of not less than one hundred fifteen millimeters (four and one-half inches) from the centerline of the rungs, cleats, or steps to the nearest permanent object in back of the ladder shall be provided. A permanent object is to include pipes, wiring, duct, switches, etc., protruding from the pit wall or structure.

(3) All pits shall comply with ASME A17.1-2.2.4.5 and shall include:

ASME A17.1-2.2.4.5(f) Separate pit access doors shall not be located where a person, upon entering the pit, can be struck by any part of the car or counterweight when either is on its fully compressed buffer.

(4) ASME A17.1-2.2.4.4 Pits shall be accessible only to elevator personnel. The owner or other authorized people may access the pit for retrieval, sump pump, drain, and 110VAC lighting service, only if they have been properly trained for pit access entry and a record of the training is kept on-site.

WAC 296-96-02557 Pit lighting and stop switch.

(1) ASME A17.1-2.2.5.3 The light switch shall be so located as to be accessible from the pit access door on the ladder side and adjacent to the pit stop switch.

(2) ASME A17.1-2.2.6.2 In elevators where access to the pit is through the lowest landing hoistway door, a stop switch shall be located between thirty-six inches and forty-eight inches above the floor level of the landing, within reach from the access floor and adjacent to the pit ladder, if provided. When the pit exceeds one thousand seven hundred millimeters (sixty-seven inches) in depth, an additional stop switch is required adjacent to the pit ladder and approximately one thousand two hundred millimeters (forty-seven inches) above the pit floor.

WAC 296-96-02558 Pit equipment.

(1) ASME A17.1-2.4.2 When oil buffers are used, the bottom runby shall be not less than one hundred fifty millimeters (six inches). Sections (a) and (b) from the ASME A17.1-2.4.2.1 code are not adopted.

(2) ASME A17.1-2.2.8 When working platform inspection operation is provided, according to ASME A17.1-2.7.5.3.6 in hoistways containing a single elevator:

(a) A pit access door is required; or

(b) Additional elevator personnel shall be present outside the hoistway when the pit inspection operation is in effect.

WAC 296-96-02560 What are the requirements for submersible pumps or sumps?

(1) Sump pumps and drains are not required in most elevator pits. Sump holes must be installed and measure a minimum of eighteen inches by eighteen inches by eighteen inches. If drains or sump pumps are installed, they must not be directly connected to sewers and/or storm drains. P-traps and check valves are not allowed. All installations must meet the NEC and all plumbing codes. Drains meeting the above requirements may be installed in lieu of sump holes.

Sump hole covers must be designed to withstand a load of three hundred pounds per square foot.

(2) ASME A17.1-2.2.2.5 Elevators that are provided as fire service access elevators (one hundred twenty feet) or occupant evacuation elevators (four hundred feet) a drain or sump pump shall be provided. The sump pump or drain shall have the capacity to remove a minimum of three thousand gallons/hour per elevator and meet all requirements in ASME A17.1, ICC and this chapter.

EXEMPTION: Residential elevators, vertical platform lifts, and special purpose lifts are exempt from this section.

WAC 296-96-02564 ASME A17.1-2.4.12.1-2005 Distance required for car top refuge space.

An unobstructed horizontal area of not less than half meters^2 (5.4 feet^2) shall be provided on top of the car enclosure for refuge space. It shall measure not less than six hundred millimeters (twenty-four inches) on any side. This area shall be permitted to include the space utilized for the top emergency exit (see ASME A17.1-2.14.1.5.1(f)). The minimum vertical distance in the refuge area between the top of the car enclosure and the overhead structure or other obstruction shall be not less than one thousand one hundred millimeters (forty-three inches) when the car has reached its maximum upward movement.

WAC 296-96-02566 ASME A17.1-2.14.7.1.4 Requirements for top of car lighting and receptacle for elevators.

Each elevator shall be provided with lighting and a duplex receptacle fixture on the car top.

(1) The lighting shall be permanently connected and fixed to provide an illumination level of not less than one hundred lux (ten foot candle) measured:

(a) At the point of any elevator part or equipment, where maintenance or inspection is to be performed from the car top; and

(b) Across the entire horizontal plane of the top of the car up to a minimum height of six feet.

(2) All lighting fixture(s) shall be equipped with guards and protected from accidental breakage.

(3) The light switch shall be accessible from the landing when accessing the car top.

(4) Where the access to machinery space is from the top of the car the cartop receptacle may be used.

EXCEPTION: *Residential elevator, special purpose installed without lighting.*

WAC 296-96-02567 ASME A17.1-2.7.6.3.4 Access to governors and brake.

(1) For governors that are located in the hoistway, governor access from outside the hoistway is required unless:

(a) The governor is manually reset from the controller;

(b) The governor switches are manually reset from the controller;

(c) A means is available for tripping the governor by either a switch or key from the controller or control room;

(d) A permanent means from the controller or control room is provided that shows the car direction and speed, plus the governor tripping speed;

(e) A means of servicing and inspecting the governor can be performed from inside the hoistway;

(f) Access to the governor is via the cartop working platform or per WAC 296-96-23115; and

(g) Access is safe, convenient and within easy reach for inspection, maintenance and testing purposes and not from the adjacent car.

(2) If governor or brake access is required from outside the hoistway the access panel must:

(a) Be a minimum of twelve inches by twelve inches and a maximum of twenty-four inches by twenty-four inches;

(i) Access openings in a residential hoistway enclosure where full bodily entry is not necessary for rescue operation, maintenance and inspection of components shall be a minimum of ninety-six square inches with a minimum of eight inches on one side and have a maximum width and height of twenty-four by twenty-four inches.

(ii) ASME A17.1-5.3.1.7.7 Where direct observation of the drive machine, suspension means, or brake is not possible from the access opening, a means conforming to the requirements of ASME A17.1-2.7.6.4 shall be provided.

(b) Self-closing and self-locking, security level key outlined in ASME A17.1-8.1 with key in key box (exempt residential for key box);

(c) If located more than sixty inches above the floor provide a work platform that provides safe and convenient access to the panel (exempt residential);

(d) Meet the fire rated requirement of the hoistway;

(e) Cannot be located above the hoistway if a fall hazard into the hoistway is created by the access panel; and

(f) Access must be safe, convenient and within easy reach for inspection, maintenance, and testing procedures.

WAC 296-96-02568 ASME A17.1-5.3.1.1 Residential hoistway enclosures.

Residential hoistways shall be solidly enclosed throughout their height without grillwork or openings other than for landing or access doors. Enclosures shall be of sufficient strength to support in true alignment the hoistway doors, gates and their locking equipment. The fire resistance rating shall be in accordance with the requirements of the building code. Any exterior windows within the hoistway shall be protected by metal grillwork. Grillwork shall reject a ball seventy-six millimeters (three inches) in diameter and shall be securely fastened from the inside of the hoistway.

Note: *See ASME requirements for partially enclosed hoistways.*

WAC 296-96-02570 How do we enforce hoistway ventilation?

(1) Area of vents. As required in International Building Code (IBC) 3004.3.1 and chapter 51-50 WAC, the area of the vents shall not be less than 3-1/2 percent of the area of the hoistway nor less than three square feet (0.28 m^2) for each elevator car, and not less than 3-1/2 percent nor less than one-half square foot (0.047 m^2) for each dumbwaiter car in the

hoistway, whichever is greater. The total required vent area shall be equipped with dampers that remain powered closed until activated open by the fire alarm system panel. The dampers shall open upon loss of power.

(2) Activation of the powered vent must not be from the same device that activates the phase one fire recall.

EXEMPTION: Special purpose and residential elevators are exempt from this section.

WAC 296-96-02575 How do we enforce hoistway pressurization?

Pressurization requirements. Elevator hoistways shall be pressurized to maintain a minimum positive pressure of 0.10 inches of water column with respect to adjacent occupied space on all floors and a maximum pressure so as to not prevent the automatic operation of the elevator doors, as well as accounting for the stack and wind effect expected on the mean low temperature January day. This pressure shall be measured at the midpoint of each hoistway door, with all hoistway doors open at the designated primary recall level and all other hoistway doors closed. The supply air intake shall be from an outside, uncontaminated source located a minimum distance of twenty feet from any air exhaust system or outlet.

(1) Elevator doors. Each elevator door shall operate properly when hoistway pressurization is in effect.

(2) Hoistway venting. Hoistway venting required by Section 3004 need not be provided for pressurized elevator shafts.

(3) Machine rooms. Elevator machine rooms shall be pressurized in accordance with this section unless separated from the hoistway shaft by construction in accordance with the International Building Code, Section 707.

(4) Special inspection. Special inspection for performance shall be required in accordance with the International Building Code, Section 909.18.8. System acceptance shall be in accordance with the International Building Code, Section 909.19.

(a) The elevator department must observe the operation of the doors and insure proper documentation and tags are on site.

(b) Devices shall have an approved identifying tag or mark on them consistent with the other required documentation and shall be dated indicating the last time they were successfully tested and by whom.

EXEMPTION: Special purpose and residential elevators are exempt from this section.

Outside Hoistway

WAC 296-96-02580 Are keys required to be on-site?

The keys to the machine room and the keys that are necessary to operate the elevator must be located in a locked key retainer box in the elevator lobby at the designated level above the hall buttons, or located by machine room doors at no more than six feet above the floor, provided access to the key box doesn't require passage through locked doors. If in order to meet this requirement the box would be located in an unsecured location (such as the outside portion of a condo), other arrangements shall be accommodated with the written permission of the department.

The key retainer box must be:

- Readily accessible to authorized personnel;
- Clearly labeled "ELEVATOR";
- Securely mounted;

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• Equipped with a 1-inch mortise cylinder cam lock with keyway set to a #39504 Fort type key and securely mounted;

Further:

• Keys for access to elevator machine rooms and for operating elevator equipment must be tagged and kept in the key box.

• The box must contain all keys.

• Mechanical hoistway access devices must be located in the key box or machine room.

Note: *The cities of Seattle and Spokane may designate their own options for keys and lockbox arrangement via their rule processes. ASME A17.1-2.27.8 Local fire or building code authorities may specify the requirements for a uniform keyed lock box and its location to contain the necessary keys (this will be in addition to the requirements above). Where required, a lock box, including its lock and other components, shall conform to the requirements of UL 1037 (see Part 9). These keys shall be kept on the premises in a location readily accessible to firefighters and emergency personnel, but not where they are available to the public.*

EXCEPTION: Residential elevators are exempt from this section.

WAC 296-96-02585 What are the requirements for fire doors installed in front of hoistway doors?

If fire and/or smoke doors are required to be installed by the International Building Code or the local building official, they must:

(1) Not be permanently attached to the hoistway door assembly.

(2) Not encroach upon the full width and height of the hoistway door opening.

(3) Ensure the adherence to ANSI A117.1 as to hall buttons, lanterns, jamb markings, key switches and position indicators locations and line of sight.

LULA

WAC 296-96-02590 When does the department require a local building official to sign off for the installation of LULAs, stair lifts, inclined wheelchair lifts and vertical wheelchair lifts?

In existing buildings where LULAs, stair lifts, inclined wheelchair lifts and vertical wheelchair lifts are to be installed, the local building official must signify that he/she is allowing this type of conveyance on a form provided by the department.

EXEMPTION: Residential conveyances are exempt from this section.

WAC 296-96-02595 What are the general requirements for LULA elevators?

(1) LULAs may be permitted in churches, private clubs, and buildings listed on the historical register that are not required to comply with accessibility requirements.

(2) For LULAs installed according to subsection (1) of this section a form provided by the department must be signed by the local building official.

(3) LULAs must be equipped with an emergency communication device meeting the requirements of WAC 296-96-02330.

(4) ASME A17.1-5.2.1.7.1 Elevator machine rooms, control rooms, and machinery spaces containing an elevator driving machine not located in the hoistway shall have clear headroom of not less than two thousand one hundred thirty millimeters (eighty-four inches).

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(5) All maintenance, examination, and safety tests must be in accordance with ASME A17.1-8.6 and WAC 296-96-23605(3).

Accessibility Equipment

WAC 296-96-02600 What is required for physically handicapped lifts?

(1) Beginning July 1, 2004, vertical platform lifts in commercial installations must be equipped with low energy power-operated doors or gates complying with ANSI/BHMA A156.19. Doors and gates shall remain open for twenty seconds minimum. End doors shall be thirty-two inches minimum clear width. Side doors shall be forty-two inches minimum clear width.

EXCEPTION: *Lifts having doors or gates on opposite sides shall be permitted to have manual doors and gates.*

(2) For purposes of two-way communication, "not visible at all times" includes, but is not limited to, conveyances located in stairwells, auditoriums, and other areas which are not generally in the normal path of travel during the hours that the building is occupied.

WAC 296-96-02605 Private residence inclined stairway chairlifts.

(1) Private residence inclined stairway chairlifts are not required to be permanently wired into a structure. These conveyances may be equipped with a cord and plug. The plug must be directly inserted into a wall receptacle that is protected by a fuse or a circuit breaker at its source and is capable of supporting the additional load on the circuit. The source must be identified either at the receptacle or at the feeder panel. The cord must be secured in a manner that will not create any tripping hazards.

(2) ASME A18.1-7.10.1 Operation of the lift from the top and bottom landings and from the platform shall be controlled by control switches at all stations and by means of the continuous pressure type. Operation of the lift from the intermediate landings shall be controlled by "up" and "down" control switches and by means of the continuous pressure type. Controls shall be one thousand two hundred millimeters (forty-eight inches) maximum and nine hundred fourteen millimeters (thirty-six inches) minimum above the platform floor or facility floor or ground level. Operating devices shall be designed so that both the "up" and "down" circuits cannot be operated at the same time.

(3) A free passage width of not less than seventeen inches shall be provided. If the chair can be folded when not in use the distance can be measured from the folded chair. When in use there must be a minimum of two inches between any body part and the nearest obstruction.

WAC 296-96-02620 Private residence vertical platform lifts.

(1) ASME A18.1-5.10.1 Operation of the lift from the top and bottom landings and from the platform shall be controlled by control switches at all stations and by means of the continuous pressure type. Operation of the lift from the intermediate landings shall be controlled by "up" and "down" control switches and by means of the continuous pressure type. Controls shall be one thousand two hundred millimeters (forty-eight inches) maximum and nine hundred fourteen millimeters (thirty-six inches) minimum above the platform floor or facility floor or ground level. Operating devices shall be designed so that both the "up" and "down" circuits cannot be operated at the same time.

(2) NEC 20.51(A) Disconnecting means and controls. Cord and plug connection will be allowed under the following conditions:

(a) The main power source must be from a battery system that is receiving its charge from a cord and plug connected AC battery charger connected to an individual branch circuit;

(b) The circuit supplying the battery charger must be protected by a ground fault circuit protector (GFCI breaker);

(c) The receptacle used to connect to the battery charger must have a cover that meets the requirements of the National Electric Code (NEC) 406.8(b);

(d) The cord must be:

(i) Hard service rated;

(ii) Listed by an electrical testing laboratory approved by the department of labor and industries electrical program;

(iii) In compliance with the requirements of the NEC 400; and

(iv) Properly secured at least every twenty inches, without presenting a tripping hazard, and be limited to twelve feet in length from the battery charger.

(e) A sign must be posted at both the AC and DC source of power disconnecting means that states "warning - parts of the control panel are not de-energized by this switch"; and

(f) The DC source of power must have a disconnect located on the exterior and within site of the lift, be lockable, identified by the available voltage, and labeled per NEC 110.22.

WAC 296-96-02625 Private residence incline platform lifts.

ASME A18.1-6.10.1 Operation of the lift from the top and bottom landings and from the platform shall be controlled by control switches at all stations and by means of the continuous pressure type. Operation of the lift from the intermediate landings shall be controlled by "up" and "down" control switches and by means of continuous pressure type. Controls shall be one thousand two hundred millimeters (forty-eight inches) maximum and nine hundred fourteen millimeters (thirty-six inches) minimum above the platform floor, facility floor, or ground level. Operating devices shall be designed so that both the "up" and "down" circuits cannot be operated at the same time.

WAC 296-96-02630 Commercial vertical and incline platform lifts.

(1) ASME A18.1-2.10.1 and ASME A18.1-3.10.1 Operation of the lift from the top and bottom landing(s) and from the platform shall be controlled by control switches at all stations and by means of the continuous pressure type. Operation of the lift from the intermediate landing(s) shall be controlled by "up" and "down" control switches and by means of the continuous pressure type. Controls shall be one thousand two hundred millimeters (forty-eight inches) maximum and nine hundred fourteen millimeters (thirty-six inches) minimum above the platform floor, facility floor, or ground level. Operating devices shall be designed so that both the "up" and "down" circuits cannot be operated at the same time.

(2) ASME A18.1-4.1.1 Incline commercial platform lifts in new and existing buildings must have a clear passage width of not less than twenty inches. If the platform can be folded when not in use, the distance shall be measured from the folded position to the nearest obstruction.

WAC 296-96-02640 Incline commercial stairway chair lifts.

(1) ASME A18.1-2.10.1 and ASME A18.1-3.10.1 Operation of the lift from the top and bottom landing(s) and from the platform shall be controlled by control switches at all stations and by means of the continuous pressure type. Operation of the lift from the intermediate landing(s) shall be controlled by "up" and "down" control switches and by means of the continuous pressure type. Controls shall be one thousand two hundred millimeters (forty-eight inches) maximum and nine hundred fourteen millimeters (thirty-six inches) minimum above the platform floor, facility floor, or ground level. Operating devices shall be designed so that both the "up" and "down" circuits cannot be operated at the same time.

(2) ASME A18.1-4.1.1 Incline commercial stairway chair lifts in new and existing buildings must have a clear passage width of not less than twenty inches. If the seat can be folded when not in use, the distance shall be measured from the folded position to the nearest obstruction.

PART C1 - MINIMUM STANDARDS FOR NEW AND ALTERED MATERIAL LIFTS

WAC 296-96-05009 What are the requirements for existing material lifts?

Material lifts must comply with the rules adopted by the department that were in effect at the time the conveyance was permitted, regardless of whether the rule(s) has been repealed, unless any new rule specifically states that it applies to all conveyances regardless of when the conveyance was permitted. Copies of previous rules adopted by the department are available upon request.

If the department determines that a material lift was installed without a permit and/or without an inspection, the conveyance will be required to comply with the current rules adopted by the department.

WAC 296-96-05010 What are the department's rules on material lifts?

(1) These rules define a "material lift" as a fixed stationary conveyance that:

(a) Has a car or platform moving in guides;

(b) Serves two or more floors of a building or structure;

(c) Has a vertical rise of at least five feet and no more than 60 feet;

(d) Has a maximum speed of fifty feet per minute;

(e) Is not part of a conveying system but is an isolated self-contained lift;

(f) Travels only in an inclined or vertical direction;

(g) Is operated or supervised by an individual designated by the employer;

(h) Is installed in a commercial or industrial area not accessible to the general public; and

(i) May not be operated from within the car.

(2) Material lifts must not carry people so their operation or failure will not endanger people working near them. WAC 296-96-05010 through 296-96-05290 establishes requirements for the construction, installation, and operation of material lifts. These rules allow certain conveyances designed solely to transport material and equipment to be constructed to less stringent and costly standards than ASME A17.1.

These rules do not apply to conveyances that lack a car (platform) and use rollers, belts, tracks, power conveyors, or similar carrying (loading) surfaces. (See ASME/ANSI B20.1.)

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WAC 296-96-05020 What requirements apply to the construction and fire safety of hoistway enclosures?

Generally, local codes and ordinances govern hoistway enclosure construction. When not in conflict with a local code requirement, the enclosure must:

(1) Be built to a height of 7 feet above each floor, landing and adjacent stairway tread;

(2) Extend (adjacent to the counterweights) the full height of the floor and 8 inches beyond the counterweight raceway;

(3) Be constructed of either solid material or material with openings that will reject a 2-inch diameter ball; and

(4) Be supported and braced so that it does not deflect more than 1 inch when subjected to a force of 100 pounds applied perpendicular at any point.

(5) A full height hoistway enclosure is required only on the side(s) of the material lift for which the car is not equipped with a gate or enclosure.

WAC 296-96-05030 What are the construction requirements for hoistway enclosure gates and doors?

Enclosure gates (doors) must be constructed according to the following standards:

(1) The gate must guard the full width of each opening on every landing.

(2) It must be built in one of the following styles:

(a) Vertically sliding;

(b) Biparting;

(c) Counter-balanced;

(d) Horizontally swinging; or

(e) Horizontally sliding.

(3) Be constructed of either solid material or material with openings that will reject a 2-inch diameter ball.

(4) Be constructed with a distance of not more than 2 1/2 inches between a hoistway gate or hoistway door face and a landing sill edge.

(5) Be designed and guided to withstand (without being broken, permanently deformed, or displaced from its guides or tracks) a 100 pound lateral pressure applied near its center.

(6) Be equipped with labeled and listed electrical interlock(s) that prevents the operation of the lift when the doors or gates are open.

(7) Be constructed with balanced type vertically sliding gates that extend no more than 2 inches vertically from the landing threshold and no less than 66 inches above it.

WAC 296-96-05040 What requirements apply to a hoistway that does not extend to the lowest levels of a building or structure?

If the space directly below the hoistway is accessible, the following requirements apply:

(1) All lift counterweights must have safeties.

(2) All cars and counterweights must have either spring or oil buffers.

(3) Spring buffers must not fully compress when struck by a car carrying its rated load or by the counterweights when they are moving at the following speeds:

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(a) For safeties operated by a governor, the tripping speed of the governor is the maximum striking speed.

(b) For safeties not operated by a governor, 125 percent of the rated speed is the maximum striking speed.

(4) Car and counterweight-buffer supports must be able to withstand any impact upon the buffer (without permanent deformation) while occurring at the following speeds:

(a) For safeties operated by a governor, the tripping speed of the governor at the rated capacity is the maximum impact speed.

(b) For safeties not operated by a governor, 125 percent of the rated speed is the maximum impact speed.

WAC 296-96-05050 What requirements apply to lift hoist driving machines?

(1) Lift hoist driving machines must be one of the following types:

(a) Winding drum.

(b) Traction.

(c) Direct plunger.

(d) Hydraulic.

(e) Roped or chained hydraulic.

(f) Rack and pinion.

(g) Roller chain drive.

(h) Scissors.

(i) Screw.

(2) Overhead mounted driving machines must either be secured to the top of overhead beams or supported by the floor above. Hooks, cables, chains or similar devices cannot suspend driving machines.

(3) For traction machines, the diameter of drive sheaves cannot be less than 30 times the diameter of the hoisting cables. The diameters of all other sheaves cannot be less than 21 times this diameter.

WAC 296-96-05070 What car enclosure requirements apply to lifts?

(1) Lift cars must have their sides enclosed with solid panels or openwork that will reject a *two*-inch diameter ball. On the car sides where there is no gate (door), the enclosure must extend to a height of at least *forty-eight* inches from the floor or to a height necessary to enclose the materials that are being moved, *whichever is greater*. On the car side next to the counterweight runway, the enclosure must extend vertically to the car top or underside of the car crosshead and horizontally to at least *six* inches on each side of the runway.

(2) Material lifts in unenclosed hoistways must have a car gate that is constructed of the same material as the car enclosure.

(3) The gate, *if required or supplied*, must be the same height as the sidewalls of the car enclosure and must be provided with a latching device *and electrical contact to prevent the operation of the motor and brake if open more than two inches*.

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WAC 296-96-05080 How much running clearance is permitted between a car sill and a hoistway?

Running clearance between a car sill and a hoistway enclosure must not exceed *two* inches. *If the lift is supplied with a car door or gate, the running clearance is measured from the car sill to the hoistway sill.*

WAC 296-96-05090 What requirements apply to car and counterweight guides?

Car and counterweight guide rails must be fastened so they will not deflect more than 1/8 inch. They must also be strong enough to withstand, without deformation, the application of a car safety when the car is carrying its rated load and traveling at its rated speed.

WAC 296-96-05100 How much weight can be placed on a car frame and platform during loading and unloading?

Car frames and platforms must be designed and constructed per manufacturers' specifications to withstand the impact of the maximum weight encountered during loading and unloading.

WAC 296-96-05120 What requirements apply to car operating devices, terminal stopping devices and electrical protective devices?

If electrically operated, such devices must be enclosed. On lifts driven by winding drum machines, there must be a slack rope device employing an enclosed electric switch (manually reset type) which halts power to the drum and brake when the hoisting rope becomes slack.

On other lifts suspended by flexible means such as chain, there must be a slack rope/chains device employing an enclosed electric switch (manually reset type) which halts power to the machine and brake when the suspension means becomes slack.

WAC 296-96-05140 What requirements apply to car safeties?

Car safeties must be used on all material lifts that are suspended by wire ropes or chains. They must be able to stop and sustain a car carrying *one hundred twenty-five* percent of its rated load. *This shall be demonstrated during the acceptance inspection and test procedure with an overspeed or gravity drop test, minimum two safeties at a time.* On lifts driven by rack and pinion machines:

(1) Car safeties must be able to stop and sustain a car carrying one hundred twenty-five percent of its rated load.

(2) Car safeties will consist of a freely rotating safety pinion, an overspeed governor and a safety device which may be mounted on the car.

(3) The rotating pinion driving an overspeed governor will travel on a stationary rack which is vertically mounted in the hoistway.

(4) The governor will actuate the safety device when the downward speed of the car reaches the tripping speed and will bring the car to a gradual stop.

WAC 296-96-05150 What requirements apply to lift brakes?

On electric lifts, brakes must engage by springs and must release electronically. All brakes must have the ability to stop a car and hold it at rest while the car is carrying 125 percent of its rated load. At least one brake must be mounted on

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the load side of the driving machine's worm shaft. On indirectly driven lifts, brakes must engage when the driving mechanism fails.

WAC 296-96-05160 What types of ropes, chains, and rope connections must be used on a lift?

(1) The following general requirements apply:

(a) Iron (low carbon steel) or steel wire ropes with fiber cores must be used to suspend cars and counterweights.

(b) The minimum safety factor for suspension ropes must be 6 times the manufacturers rated breaking strength per rope.

(c) The car, the counterweight end of the car and the counterweight wire ropes (or the stationary hitch ends where multiple roping is used) must be fastened so that the looped ends of the turned back portion in the rope sockets are clearly visible. Fastenings must either be:

(i) Individual tapered, babbitted rope sockets; or

(ii) Other types of department approved rope fastenings.

(d) Rope sockets must develop at least 80 percent of the breaking strength of the strongest rope used in the sockets.

(e) U-bolt rope clips (clamps) cannot be used for load fastenings.

(f) A metal or plastic data tag must be securely attached to one of the wire rope fastenings each time the ropes are replaced or reshackled. The data tag must include:

(i) The diameter of the ropes in inches; and

(ii) The manufacturer's rated breaking strength.

(iii) The month and year the ropes or chain were installed.

(iv) The name of the person or organization who installed the ropes.

(v) All replacements of wire rope or chain must be in accordance with the lift manufacturer's specifications.

(2) The following requirements apply to specific types of material lifts:

(a) Traction type lifts must use at least three hoisting ropes.

(b) Lifts suspended by hoisting chains must comply with the chain manufacturer's specifications for maintenance, inspection, and application.

(c) Lifts using roller chain type lifting chains must use chains with a six to one safety factor based on ASME/ANSI B-29.1M minimum (not average) chain strength.

(d) Drum type lifts, must use either at least two hoisting ropes or a secondary as well as a primary load path to the hoist must be employed. Also, the cable secured to the drum must be at least one and one-half turns around the drum when the carrier is at its extreme limit of travel.

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WAC 296-96-05170 What requirements apply to lift control stations?

Lift control stations must be located at each landing out of reach but within sight of the car. They must have controls that are permanently and clearly labeled by function. The controls must have a stop switch that will halt electrical power to the driving machine and brake. This stop switch must:

(1) Be manually operated;

(2) Have red operating handles or buttons;

(3) Be conspicuously and permanently marked "STOP"; and

(4) Clearly indicate the stop and run position.

WAC 296-96-05190 How must lift pits be constructed?

Lift pits must:

(1) Have noncombustible floors;

(2) Be designed to prevent the entry of groundwater into the pit;

(3) Have floors that are substantially level;

(4) Have drains that are not directly connected to sewers;

(5) Provide safe and convenient access to the pit;

(6) Provide an approved ladder for pits deeper than 3 feet; and

(7) Have non-perforated metal guards installed on the open sides of the counterweights where spring, solid or oil type buffers are attached. These guards must:

(a) Extend from a point not more than 12 inches above the pit floor to a point at least 7 feet but not more than 8 feet above the floor;

(b) Be fastened to a properly reinforced and braced metal frame which will be at least equal in strength and stiffness to No. 14 U.S. gauge sheet steel; and

(c) Be omitted on the pit side where compensating chains or ropes are attached to the counterweight.

WAC 296-96-05200 Which lift landings must be illuminated?

All lift landings must be illuminated.

WAC 296-96-05210 What signs must be posted on landings and lifts?

Each lift must have the following two signs:

(1) A "CAPACITY" sign permanently fastened in the lift car and on each landing. This sign must indicate the rated load of the lift in pounds and be made of metal with 2-inch high black letters on a yellow background.

(2) A "NO RIDERS" sign conspicuously and permanently fastened on the landing side of all hoistway gates (doors) and in the enclosure of each car. This sign must be made of metal with 2-inch high black letters on a red background.

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WAC 296-96-05220 What electrical wiring standards apply to lifts?

All electrical wiring, installations, and equipment in a hoistway, machine room or machinery space must conform to the National Electrical Code in effect at the time of installation or major alteration.

WAC 296-96-05230 What safety regulations apply to exposed equipment?

All exposed gears, sprockets, sheaves, drums, ropes and chains must be guarded to protect against accidental contact as required General safety and health standards adopted according to chapter 49.17 RCW.

WAC 296-96-05240 What are the minimum maintenance requirements for lifts?

All owners, or designated owner representatives, of material lifts described in this chapter are responsible for the maintenance of their lifts and parts. Minimum maintenance requirements are:

(1) All lifts described in this chapter and their parts must be maintained in a safe condition. *Maintenance, examinations, and safety tests are to be performed and documented to the applicable sections of WAC 296-96-23601 through 296-96-23610*; and

(2) All devices and safeguards that are required by this chapter must be maintained in good working order.

WAC 296-96-05260 When are inspections required?

Inspections are required for each lift installation, alteration or relocation and must be conducted at the completion of the job before the lift is placed into service. The inspection must include a safety test at 125 percent of rated load.

WAC 296-96-05290 Under what conditions is a five-year test administered?

A five-year test of the material lift car and counterweight safety devices must be conducted, and the test must be administered under the following conditions:

(1) Qualified people will conduct the test. A qualified person is either:

(a) An elevator mechanic licensed in the appropriate category for the conveyance being tested;

(b) The representative of a firm that manufactured the particular material lift, and who holds a current temporary mechanic's license in this state;

(c) The representative of a firm that manufactured the particular material lift who is working under the direct supervision of an elevator mechanic licensed in the appropriate category for the conveyance being tested.

(2) The car safety devices must be tested while the car is carrying a 100 percent rated load and the counterweight is at no load.

(3) A report of the test results must be submitted to the department for approval.

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PART C2 - CONSTRUCTION, OPERATION, MAINTENANCE AND INSPECTION OF INCLINED PRIVATE RESIDENCE ELEVATOR FOR TRANSPORTING PERSON(S)

WAC 296-96-07010 What is the scope of Part C-2?

The rules in this part are the minimum standard for all new inclined private residence elevators for single family use. The purpose of this part is to provide for the safety of all persons riding in or operating an inclined private residence elevator to ensure that no person in proximity of the elevator will be endangered by its operation or failure.

WAC 296-96-07020 What is the definition for inclined private residence elevator?

"Inclined private residence elevator" means a device constructed and operated for transporting people or property from one elevation to another at an angle of inclination of seventy degrees or less from the horizontal. Essentially, it is a car or platform traveling on guides or guiding members in an inclined plane.

NOTE: For purposes of this chapter, devices installed indoors on stairways that utilize chairs to carry passengers are not considered "inclined passenger elevators."

WAC 296-96-07021 What are the requirements for existing inclined private residence elevators?

Inclined private residence elevators must comply with the rules adopted by the department that were in effect at the time the elevator was permitted, regardless of whether the rule(s) has been repealed, unless any new rule specifically states that it applies to all conveyances, regardless of when the conveyance was permitted. Copies of previous rules adopted by the department are available upon request.

If the department determines that an inclined private residence elevator was installed without a permit and/or without an inspection the conveyance will be required to comply with the current rules adopted by the department unless you are able to provide documentation determining the date the conveyance was installed (e.g., sales receipts, building permits, or other appropriate documentation).

WAC 296-96-07024 What rules apply to alterations of inclined private residence elevators?

If the inclined private residence elevator is altered only the component(s) that was altered must comply with the applicable rules adopted by the department in effect at the time the conveyance was altered. If the department determines that an elevator was altered without a permit and inspection, the conveyance will be required to comply with the applicable rules adopted by the department at the time the noncompliant alteration was identified.

WAC 296-96-07030 Does the department approve private residence elevator plans and specifications?

Yes.

(1) Before commencing construction of any inclined private residence elevator the licensed installer must submit complete plans and specifications to the department for approval.

(2) Plans and specifications covering the installation of an inclined private residence elevator must be endorsed by a professional engineer before the department will approve the plans.

DRAFT future suggested language

WAC 296-96-07035 What are the minimum maintenance requirements for inclined private residence elevators?

Owners of inclined private residence elevator are responsible for the following:

(1) Maintaining elevators and mechanical parts in a safe condition; and

(2) Ensuring that all devices and safeguards required by these regulations are maintained in good working order.

The department recommends maintenance, examinations, and safety tests be performed and documented to the applicable sections of WAC 296-96-23601 through 296-96-23610.

WAC 296-96-07040 What are the clearance requirements for an incline runway?

(1) If the car sides extend less than 6 feet above the floor of the car, there must be no obstruction along the runway within 24 inches of the car sides. **EXCEPTION**: When solid guards are installed on the obstruction in both directions of travel which project at least 14 inches in line with the direction of travel, the running clearance may be reduced to 7 inches. The guard must be arched and the edges rounded to eliminate shear hazard.

(2) Guiding members and moving parts of the inclined private residence elevator must be kept free of brush and other types of material that might either impede the travel or cause deterioration of the equipment over time.

WAC 296-96-07050 What are the construction requirements for car landing enclosures and gates for inclined private residence elevators?

Any landing enclosures and gates must have:

(1) A railing at least 42 inches high to protect all landing platforms and those areas of a building used as landing platforms; and

(2) A gate whose height is equal to the height of the railing to protect the passenger landing opening.

(a) Gates may either be a horizontally sliding type or a swing type; and

(b) All gates must be equipped with a latch that holds the gate closed and an electrical contact to prevent movement of the car when a gate is open; and

(3) Railing enclosure and gate shall reject a 1.5 inch diameter ball.

WAC 296-96-07060 What types of bumpers and buffers must be installed on inclined private residence elevators?

(1) If spring or equivalent type buffers are not being used and rated speeds do not exceed 50 feet per minute, solid bumpers must be installed. Solid bumpers must:

(a) Be built of wood or other suitable resilient material;

(b) Have the ability to resist deterioration from weather;

(c) Have sufficient strength to withstand, without failure, the impact of a descending car carrying its rated load or counterweight and traveling at 115 percent of its rated speed.

(2) Spring type buffers must be installed when speeds exceed 50 feet per minute. Spring buffers must:

(a) Be built with a minimum stroke of 3/4 inch and with a maximum stroke of 1 1/2 inches;

(b) Not fully compress when struck by a car carrying its rated load or counterweight and traveling at 115 percent of its rated speed.

DRAFT future suggested language

(3) Inclined private residence elevators are not required to have bumpers and buffers except when obstructions are encountered.

WAC 296-96-07070 What are the requirements for machinery beams and supports?

(1) All machinery and sheaves must be sufficiently secured and supported to prevent any part from becoming loose or displaced. Beams directly supporting machinery must be made of steel, sound timber or reinforced concrete.

(2) Beams and support loads must be computed as follows:

(a) The total load on the beams must be equal to the weight of all apparatus resting on the beams plus twice the maximum load suspended from the beams.

(b) The load resting on the beams must include the complete weights of the driving machine, sheaves, controller, etc.

(c) The load suspended from the beams must include the sum of the tensions in all ropes suspended from the beams.

(3) The elevator driving machine or sheaves must not be fastened to the underside of the supporting beams at the top of the hoistway. **EXCEPTION**: Cast iron in tension must not be used for supporting members for idler and deflecting sheaves where hung beneath beams.

(4) The factor of safety for beams and supports must be no less than:

(a) Five for steel; and

(b) Six for timber and reinforced concrete.

WAC 296-96-07080 What are the load and size requirements for car platforms?

The minimum rated load shall be not less than the following:

(1) For net platform areas up to and including twelve square feet, the rated load shall be not less than forty pounds per square foot or three hundred fifty pounds whichever is greater.

(2) For net platform areas greater than twelve square feet, the rated load shall be based upon sixty-two and one-half pounds per square foot.

WAC 296-96-07090 What is the maximum rated speed of an incline elevator?

The maximum rated speed of an incline elevator, measured along the incline, is 75 feet per minute.

WAC 296-96-07100 What construction requirements apply to inclined private residence elevators?

(1) All of the components associated with inclined private residence elevators must be built to a minimum safety factor of five, unless otherwise specified in this part.

(2) Inclined private residence elevator car frames and platforms must:

(a) Be built of metal, a combination of metal and wood or other materials of equal strength;

(b) Be suitably prepared and/or protected for exposure to weather.

(3) Incline car chassis must:

(a) Be built of metal, except for the guiding members, and

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(b) Chassis guiding members must be retained and/or enclosed in guides so that the chassis cannot be derailed.

(4) Cast iron may not be used in the construction of a car frame or chassis.

(5) A car may have only one compartment.

WAC 296-96-07110 What construction requirements apply to car enclosures?

Car enclosures must be:

(1) Enclosed on all sides, except at the entrance, to a height of at least 42 inches;

(2) Enclosed with a type of material that will reject a 1 1/2 inch diameter ball;

(3) Securely fastened to the car platform so that it cannot become loose or displaced due to ordinary service, application of the car safety, or car contact with a buffer.

(4) Built to withstand a 75 pound pressure, horizontally applied at any point on the wall, without causing a wall deflection that reduces running clearance below 3/4 inch or above 1 inch.

WAC 296-96-07120 What construction requirements apply to car doors and gates?

(1) All car entrances must be protected by a door or gate. The height of the door or gate must be at least 42 inches and equal to the height of the car enclosure. Doors and gates may be either of a solid design or an openwork design. If of an openwork design, the door or gate must be able to reject a 3-inch diameter ball. After the effective date of these rules the diameter will be reduced to 1.5 inches.

(2) Car doors or gates must be equipped with an electric contact that prevents the elevator from operating unless the door or gate is securely closed. If the gate is a swing type opening outward from the car, the electric contact must not be made until the gate is securely latched.

(3) All car doors or gates must be manually operated.

WAC 296-96-07130 What type of glass or plastic can be used in a car enclosure?

Weather resistant plastic and tempered safety glass may be used in car enclosures.

WAC 296-96-07140 Are capacity and data plates required?

(1) The manufacturer must install a weather resistant capacity plate. It must be securely fastened to the car in a conspicuous place and state the car's rated load in pounds using letters at least 1/4 inch high.

(2) The manufacturer must install a metal data plate showing the car's weight, speed, suspension means data, manufacturer's name and date of installation. The data plate must be securely fastened in a conspicuous place in the machine area.

WAC 296-96-07150 What are the construction requirements for guide rails, track supports and fastenings?

(1) Guides, guide rails, guide rail brackets, splice plates, and fastenings must be made of steel or other metals conforming to the requirements of this section.

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(2) Guides, guide rails, guide rail brackets, and their fastenings and supports must, at the point of support, deflect 1/8 inch or less while resisting horizontal forces encountered during loading. When horizontal force is measured at a mid-point between brackets, guide rails must deflect 1/4 inch or less in any direction.

Fixed, suspended cable guides may be used as a guide member(s). When used, the deflection is to be specified by the manufacturer and approved by a structural engineer licensed in the state of Washington.

(3) The top and bottom of each guide or guide rail run must not allow a car and counterweight guiding members to travel beyond the guide rail ends.

WAC 296-96-07160 What construction requirements apply to counterweights?

(1) Counterweights, where used, must be in a guide or guiding members.

(2) Counterweights must not be of sufficient weight to cause undue slackening of any car hoisting rope or chain during acceleration or retardation of the car. Counterweight weight section must be mounted in structural or formed metal frames which are designed to retain weights securely in place.

EXCEPTION: Counterweights may be constructed of a single metal plate.

WAC 296-96-07170 What are the requirements of safeties and governors?

(1) All inclined private residence elevators must be equipped with a safety capable of stopping and sustaining a car carrying its rated load.

(a) Elevator safeties must be type "A" or "B" or other devices approved by the department and must be operated by a speed governor.

(b) Elevator safeties must operate independently of governor speed action and without delay when a hoist rope breaks.

(2) Governors shall operate to set the safety at a maximum of 140 percent of rated speed. Upon slackening of the hoist ropes the safety shall set without appreciable delay and independently of the speed governor. The governor shall be located where:

(a) If over-travel occurs, the governor will not be struck by the car or counterweight;

(b) All parts can freely and fully move;

(c) The governor is accessible for a complete examination;

(d) Governors are required to be of the mechanical type; and

(e) Belt driven governors must be monitored. In the case of belt breakage or disengagement, the car must be shut down.

(3) If ropes are used, the ropes must be made of iron, steel, Monel metal or phosphor bronze and be at least 1/4 inch in diameter. Tiller rope construction must not be used.

(4) Motor-control circuits and brake-control circuits must be opened either before the safety applies or at the time the safety applies.

(5) All safeties must apply mechanically. Electrically operated safeties must not be used.

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(6) All winding drum type inclined elevators that use rope suspensions must be equipped with a manually reset slack-rope device. During a car's descent, if the travel of the car is obstructed and the hoisting ropes go slack, the slack-rope device must stop power to the elevator motor and brake.

(7) Cast iron must not be used to build any elevator safety part that stops and sustains the elevator.

WAC 296-96-07171 How and when are safeties and governors tested?

(1) A safety must be tested before the inclined private residence elevator is put into service. It must be tested while the elevator is carrying its rated load.

(2) Governors on instantaneous type safeties must be tested by hand tripping the governor while the elevator is traveling at its rated speed. Creating sufficient slack in the rope and dropping the elevator is a method of testing speed governors located on an elevator or chassis.

WAC 296-96-07180 What are the construction requirements for driving machines and sheaves?

(1) (a) Winding drums, traction sheaves, overhead sheaves and deflecting sheaves must:

(i) Be made of cast iron or steel;

(ii) Have diameters at least 30 times the diameter of the wire hoisting ropes; and

(iii) Have machined rope grooves.

(b) EXCEPTION:

(i) If 8 x 19 steel ropes are used, drum and sheave diameters may be reduced to 21 times the diameter of the hoisting rope.

(ii) Existing incline lifts suspended by cables are not required to have machine grooves, except for the first row of cables wrapped on the drum and shall be required to have a tracking device.

(iii) On existing inclined lifts suspended by cables that do not have machine grooves on the drum, the first layer of ropes will be recognized as providing the same traction as grooves, provided that this layer remains on the drum at all times and is not allowed to wind out. Such lifts must be provided with a tracking device to ensure that the rope does not wind over itself on the drum.

(2) The factor of safety, based on the static load (the rated load plus the weight of the car, ropes, counterweights, etc.) to be used in the design of driving machines and sheaves, must be at least:

(a) Eight for driving machines and sheaves built of wrought iron and steel; or

(b) Ten for driving machines built of cast iron, cast steel or other materials.

(3) Set screw type fastenings must not be substituted for keys or pins if connections are subject to torque or tension.

(4) Gears:

(a) When connecting drums or sheaves to the main driving gear, friction gears, clutch mechanisms or couplings must not be used.

(b) Worm gears having cast iron teeth must not be used.

(5) Brakes:

(a) Electric brakes must be of the friction type set by springs and must release electrically.

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(b) All brakes must be able to stop and hold an elevator carrying 125 percent of its rated load.

(c) At least one brake must be mounted so that in the case of gearbox failure, the drum will hold the rated load.

(d) If a single ground or short-circuit, a counter-voltage or a motor field discharge occurs and the operating device is set in the stop position, the brake magnet must set the brake.

(6) Driving machines:

(a) A driving machine may be mounted on an elevator chassis or in a remote location. However, if mounted in a remote location, all sheaves and sprockets must be guarded and positioned so the hoisting ropes and chains remain properly aligned while the elevator is in use.

(b) Screw type machines must not be used.

(c) Hydraulic driving machines must conform to ASME A17.1.

(d) Roped-hydraulic machines may be used.

WAC 296-96-07190 What construction requirements apply to terminal stopping switches?

A hoistway must be equipped with normal upper and lower terminal stopping switches that are activated by an elevator chassis. Normal upper and lower terminal stopping switches must stop the elevator at the normal top and bottom terminals of travel.

(1) A hoistway must be equipped with final terminal stopping switches that are activated by an elevator chassis. These switches must stop the elevator if the elevator travels beyond the normal terminals and prevent the elevator from moving in either direction.

(2) Winding drum machines may use a slack cable switch instead of a bottom final terminal switch.

(3) Normal and final terminal stopping switches must not control the same switches on the controller unless at least two separate and independent switches are used. At least two of these separate switches must be closed in order to complete the motor and brake circuits for each direction of travel.

WAC 296-96-07200 What are the requirements for operation of an inclined private residence elevator?

(1) If the activation of the elevator is by key switch or key pad it must conform to the requirements of (a) and (b) of this subsection. The department may approve alternative methods of equal security such as key card or magnetic swipe card. Methods must conform to the following:

(a) The key or code must be entered each time to move the elevator.

(b) Key-operated switches must be of the spring return type and must be operated by a weatherproof cylinder type lock having not less than five pin or five disc combination with the key removable only when the switch is in the off position.

(2) If activation of the elevator is provided by a timing circuit that only allows the circuits to be initiated or unlocked for a sufficient amount of time to allow passengers to board the elevator and begin transit, a separate activation switch on the car is not required. The operating circuits must automatically relock:

(a) If the elevator is not activated within its preset period of time;

(b) When any landing stop button is activated;

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(c) When the preset timing period has expired and the car has completed transit to another landing or returns to the departure landing.

(3) Emergency stop switches must be provided on or adjacent to the operating station.

(a) Stop switches in the car must:

(i) Be of a manually opened and manually closed type;

(ii) Have red handles or buttons and be conspicuously marked "STOP";

(iii) Open even if springs fail when springs are used.

(b) Stop switch at other operating stations:

(i) May be of a momentary type;

(ii) Must have red handles or buttons and be conspicuously marked "STOP";

(iii) Must open even if springs fail when springs are used;

(iv) After initiation of stopping, the car may not automatically restart. Run condition must be manually initiated.

(4) Design and installation of control and operating circuits must meet the following:

(a) Control systems based upon the completion or maintenance of an electric circuit must not be used for interrupting power and applying machine brakes at terminals; stopping elevators when an emergency stop switch is open or when any electrical protective device operates; stopping a machine when the safety applies.

(b) If springs are used to activate switches, contact, or circuit breaking relays to stop the elevator at a terminal, the springs must be of the restrained compression type.

(5) Hand rope operation must not be used.

(6) Radio controls may be used in lieu of wiring for all car controls provided:

(a) The system is set up so that it is fail safe (if contact is lost, the unit will stop);

(b) In such installations, the STOP button in the car shall open the contact, and maintain an open condition, so that the car stops in the fail-safe mode as described in (a) of this subsection; and

(c) The controls are permanently mounted and conform to code.

WAC 296-96-07210 What are the construction requirements for suspension methods?

(1) When a chassis is suspended from a driving machine by a wire rope, a single method of suspension may be used. The suspension means may be any one of the following:

(a) Steel elevator wire rope;

(b) Steel aircraft cable; or

(c) Roller chain conforming to ANSI transmission roller chains and sprocket teeth.

(2) Steel tapes must not be used as a suspension method.

(3) The minimum diameter of hoist ropes or cables must be 1/4 inch galvanized elevator wire rope and 3/16 inch aircraft cable.

(4) Factor of safety:

(a) The minimum factor of safety for a suspension method is 8 based upon the rope tension while elevating a car carrying its rated load.

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(b) In no case, must the rated breaking strength of the rope be less than 4,000 pounds.

(5) The contact arc of a wire rope on a traction sheave must be sufficient to produce adequate traction under all load conditions.

(6) All wire ropes anchored to a winding drum must have at least one full turn of rope on the drum when the car or counterweight reaches its over-travel limit.

(7) The winding-drum ends of car and counterweight wire ropes must be secured by:

(a) Clamps on the inside of the drum; or

(b) Return loop; or

(c) Properly made individual tapered babbitted sockets; or

(d) Properly attached fittings recommended by wire rope manufacturers.

(e) U-bolt type clamps must not be used.

(8) The ends of wire ropes must be fastened to cars or counterweights by:

(a) Return loop; or

(b) Properly made individual tapered babbitted sockets that conform to ASME A17.1 requirements. (The diameter of the hole in the small end of the socket must not exceed the nominal diameter of the rope by more than 3/32 inch.); or properly attached fittings recommended by wire rope manufacturers.

(c) U-bolt type clamps must not be used.

(9) Rope repair:

(a) Car and counterweight wire ropes cannot be lengthened or repaired by splicing.

(b) If a single wire rope in a set is worn or damaged and needs to be replaced, the entire set must be replaced.

WAC 296-96-07215 What are the requirements for controllers?

All controllers must be labeled and listed. In addition, controller covers must be locked.

WAC 296-96-07220 What are the requirements for traveling cables?

(1) All traveling cables must conform to the National Electrical Code (NEC) in effect at the time of installation or major alteration.

(2) Where circuits through the traveling cable(s) exceed 30 volts, a means must be provided to stop the power automatically if the traveling cables part.

WAC 296-96-07230 What requirements apply to electrical wiring?

(1) All wiring must conform to the National Electrical Code (NEC) in effect at the time of installation or major alteration.

(2) If a driving machine is mounted on the elevator chassis, the electrical connections between the elevator and the power source must be able to stop power if a traveling cable parts.

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(3) All electrical connections between the elevator and the stationary connections must be insulated flexible conductors conforming to the applicable articles in the NEC relating to Elevators, Dumbwaiters, Escalators, Moving Walks, Wheelchair Lifts, and Stairway Chair Lifts.

(4) An elevator mechanic employed by an elevator contractor may perform electrical work from the electrical disconnect to and including the elevator operating control systems.

WAC 296-96-07240 What are the requirements for track supporting structures?

All supporting structures must meet the local building codes.

WAC 296-96-07250 What additional requirements apply to inclined private residence elevators?

(1) All inclined private residence elevators must be equipped with:

(a) A Manual method of moving the elevator in accordance with ASME A17.1; and

(b) A machine brake with a lever to release the brake allowing use of the manual method.

(2) Machinery spaces must be protected from weather and accidental contact. Machinery spaces must be locked.

(3) Guiding members and moving parts of the inclined private residence elevator must be free of brush and other types of material that might either impede the travel or cause deterioration of the equipment over time.

PART C3 - CONSTRUCTION, OPERATION, MAINTENANCE AND INSPECTION OF PRIVATE RESIDENCE INCLINED CONVEYANCES FOR TRANSPORTING ONLY PROPERTY

WAC 296-96-08010 What is the scope of Part C-3?

The rules in this section are the minimum standard for all new and existing inclined private residence conveyances for transporting property for single family use in a private residence. The purpose of this section is to ensure that inclined private residence conveyances will be used only for transporting materials and goods, not people, and that no person in proximity of the conveyance will be endangered by its operation or failure.

WAC 296-96-08020 What is the definition for inclined private residence conveyances for transporting property?

"Inclined private residence conveyances for transporting property" means a device constructed and operated for transporting property from one elevation to another at an angle of inclination of 70 degrees or less from the horizontal. Essentially, it is a car or platform traveling on guides or guiding members in an inclined plane.

WAC 296-96-08022 What are the requirements for existing inclined private residence conveyances for transporting property?

Inclined private residence conveyances for transporting property must comply with the rules adopted by the department that were in effect at the time the conveyance was permitted, regardless of whether the rule(s) has been repealed, unless any new rule specifically states that it applies to all conveyances, regardless of when the conveyance was permitted. Copies of previous rules adopted by the department are available upon request.

If the department determines that an inclined private residence conveyance for transporting property was installed without a permit and inspection the conveyance will be required to comply with the current rules adopted by the

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department unless you are able to provide documentation determining the date the conveyance was installed (e.g., sales receipts, building permits, or other appropriate documentation).

WAC 296-96-08024 What rules apply to alterations of inclined private residence conveyances for transporting property?

If the inclined private residence conveyance for transporting property is altered only the component(s) that was altered must comply with the applicable rules adopted by the department in effect at the time the conveyance was altered.

If the department determines that a conveyance was altered without a permit and inspection, the conveyance will be required to comply with the applicable rules adopted by the department at the time the noncompliant alteration was identified.

WAC 296-96-08030 Does the department approve elevators plans and specifications for inclined private residence conveyances for transporting property?

Yes.

(1) Before commencing construction of any inclined private residence elevator for transporting property the owner must submit complete plans and specifications to the department for approval.

(2) Plans and specifications covering the installation of an inclined private residence conveyance for transporting property must be endorsed by a professional engineer before the department will approve the plans.

WAC 296-96-08035 What are the minimum maintenance requirements for inclined private residence elevators for transporting property?

Owners of inclined private residence elevators for transporting property are responsible for ensuring that:

(1) Elevators and their parts are maintained in a safe condition;

(2) All devices and safeguards required by these regulations are maintained in good working order; and

(3) The department recommends maintenance, examinations, and safety tests be performed and documented to the applicable sections of WAC 296-96-23601 through 296-96-23610.

WAC 296-96-08050 What are the construction requirements for inclined private residence conveyances for transporting property for cars, landing gates, and enclosures?

(1) Any landing enclosure must have a railing at least 42 inches high to protect all landing platforms and those areas of a building used as landing platforms.

(2) Where gates are not provided at the entrance to the platform, a chain with a sign must be provided to block the landing entrance. The sign must state "Keep off landing until elevator has stopped at platform."

(3) If gates are provided, they must be:

(a) Either a horizontally sliding type or a swing type; and

(b) Equipped with a latch that holds the gate closed and an electrical contact to prevent movement of the elevator when a gate is open.

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WAC 296-96-08060 What types of bumpers and buffers must be installed on inclined private residence conveyances for transporting property?

Solid bumpers or spring type buffers may be used.

(1) Solid bumpers must:

(a) Be built of wood or other suitable resilient material;

(b) Have the ability to resist deterioration from weather; and

(c) Have sufficient strength to withstand, without failure, the impact of a descending conveyance carrying its rated load or counterweight and traveling at 115 percent of its rated speed.

(2) Spring type buffers, if used, must:

(a) Be built with a minimum stroke of 3/4 inch and with a maximum stroke of 1 1/2 inches; and

(b) Not fully compress when struck by the conveyance carrying its rated load or counterweight and traveling at 115 percent of its rated speed.

(3) Inclined private residence conveyances for transporting property are not required to have bumpers and buffers except when obstructions are encountered.

WAC 296-96-08070 What are the requirements for machinery beams and supports?

(1) All machinery and sheaves must be sufficiently secured and supported to prevent any part from becoming loose or displaced. Beams directly supporting machinery must be made of steel, sound timber or reinforced concrete.

(2) Beams and support loads must be computed as follows:

(a) The total load on the beams must be equal to the weight of all apparatus resting on the beams plus twice the maximum load suspended from the beams.

(b) The load resting on the beams must include the complete weights of the driving machine, sheaves, controller, etc.

(c) The load suspended from the beams must include the sum of the tensions in all ropes suspended from the beams.

(3) The elevator driving machine or sheaves shall not be fastened to the underside of the supporting beams at the top of the hoistway. EXCEPTION: Cast iron in tension must not be used for supporting members for idler and deflecting sheaves where they are hung beneath beams.

(4) The factor of safety for beams and supports must be no less than:

(a) Five for steel; or

(b) Six for timber and reinforced concrete.

WAC 296-96-08080 What are the load and size requirements for car platforms?

(1) The rated load of a platform must not exceed 5,000 pounds.

(2) The rated load of the platform must be no less than the load to be carried and must not exceed 50 pounds per square foot of inside net platform area.

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WAC 296-96-08090 What is the maximum rated speed of an inclined conveyance?

The maximum rated speed of an inclined conveyance, measured along the incline, is 75 feet per minute.

WAC 296-96-08100 What requirements apply to inclined conveyance?

(1) Inclined conveyance elevator frames and platforms must:

(a) Be built of metal, a combination of metal and wood or other materials of equal strength;

(b) Have a safety factor of at least 5; and

(c) Be suitably prepared and/or protected from exposure to weather.

(2) Inclined conveyance chassis must:

(a) Be built of metal, except for the guiding members;

(b) Have a safety factor of at least 5, based upon the conveyance's rated load; and

(c) Have the chassis guiding members retained and/or enclosed in guides so that the chassis cannot be derailed.

(3) Cast iron may not be used in the construction of the conveyance frame or chassis.

(4) A car may have only one compartment.

WAC 296-96-08110 What requirements apply to car enclosures?

(1) Car enclosures are not required; however, if provided, the car enclosure must be:

(a) Securely fastened to the car platform so that it cannot become loose or displaced due to ordinary service, application of the conveyance safety, or from the conveyance coming into contact with the buffer.

(b) Built to withstand a 75 pound pressure, horizontally applied at any point on the wall, without causing a wall deflection that reduces running clearance below 3/4 inch or above 1 inch.

(2) If glass or plastic is used in the car enclosure, it must be weather resistant plastic or tempered safety glass.

(3) Where there is no car enclosure, a means must be provided to secure all materials to the platform.

WAC 296-96-08140 Are capacity and data plates required on inclined private residence conveyances for transporting property?

(1) The manufacturer must install a weather resistant capacity plate. It must be securely fastened to the conveyance in a conspicuous place and state the conveyance's rated load in pounds using letters at least 1/4 inch high.

(2) The manufacturer must install a metal data plate showing the conveyance's weight, speed, suspension means data, manufacturer's name and date of installation. The data plate must be securely fastened in a conspicuous place in the machine area.

WAC 296-96-08150 What are the requirements for guide rails, track supports and fastenings?

(1) Guides, guide rails, guide rail brackets, splice plates, and fastenings must be made of steel or other metals conforming to the requirements of this section.

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(2) Guides, guide rails, guide rail brackets, and their fastenings and supports must, at the point of support, deflect 1/8 inch or less while resisting horizontal forces encountered during loading. When horizontal force is measured at a midpoint between brackets, guide rails must deflect 1/4 inch or less in any direction.

(3) The top and bottom of each guide or guide rail run must not allow the conveyance and counterweight guiding members to travel beyond the guide rail ends.

(4) Guides for inclined private residence conveyances must have no more stresses and deflection than allowed by the manufacturer's specifications.

WAC 296-96-08160 What requirements apply to counterweights?

(1) Counterweights, where used, must be in a guide or track.

(2) Counterweights must not be of sufficient weight to cause undue slackening of any conveyance hoisting rope or chain during acceleration or retardation of the conveyance. Counterweight weight section must be mounted in structural or formed metal frames which are designed to retain weights securely in place.

EXCEPTION: Counterweights may be constructed of a single metal plate.

WAC 296-96-08170 What are the requirements of safeties and governors?

(1) All inclined private residence conveyances for transporting property must have a slack cable safety device capable of stopping and sustaining a car carrying its rated load.

(2) Other types of approved safety devices may be used. If so, such devices must meet the requirements of WAC 296-96-07170.

WAC 296-96-08175 How and when are conveyance safeties tested?

The safeties must be tested before the inclined private residence conveyances for transporting property is put into service. Safeties must be tested while the conveyance is carrying its rated load.

WAC 296-96-08180 What are the requirements for driving machines and sheaves?

(1) All new winding drums, traction sheaves, overhead sheaves and deflecting sheaves must:

(a) Be made of cast iron or steel;

(b) Have diameters at least 30 times the diameter of the wire hoisting ropes. EXCEPTION: If 8 x 19 steel ropes are used, drum and sheave diameters may be reduced to 21 times the diameter of the hoisting rope; and

(c) Have machined rope grooves.

(2) The factor of safety, based on the static load (the rated load plus the weight of the car, ropes, counterweights, etc.) to be used in the design of driving machines and sheaves, must be at least 5.

(3) Set screw type fastenings must not be substituted for keys or pins if connections are subject to torque or tension.

(4) Gears:

(a) When connecting drums or sheaves to the main driving gear, friction gears, clutch mechanisms or couplings must not be used.

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(b) Worm gears having cast iron teeth must not be used.

(5) Brakes:

(a) Electric brakes must be of the friction type set by springs and must release electrically.

(b) All brakes must be able to stop and hold a car carrying 125 percent of its rated load.

(c) At least one brake must be mounted on the load side of the driving machine's worm shaft. On indirectly driven lifts, brakes must engage when the driving machine fails.

(d) If a single ground or short-circuit, a counter-voltage or a motor field discharge occurs and the operating device is set in the stop position, the brake magnet must set the brake.

(6) Driving machines:

(a) A driving machine may be mounted on a conveyance chassis or in a remote location. However, if mounted in a remote location, all sheaves and sprockets must be guarded and positioned so the hoisting ropes and chains remain properly aligned while the conveyance is in use.

(b) Screw type machines must not be used.

(c) Hydraulic driving machines must conform to ASME A17.1.

(d) Roped-hydraulic machines may be used.

(e) Rack and pinion drive may be used.

EXCEPTION: Existing inclined private residence conveyances for transporting property may use wrapped cable drums as long as they do not show signs of excessive wear.

WAC 296-96-08190 What requirements apply to terminal stopping switches?

A hoistway must be equipped with normal upper and lower terminal stopping switches that are activated by the conveyance chassis. These switches must stop the conveyance at the normal top and bottom terminals of travel.

(1) Winding drum machines may use a slack cable switch as a bottom final terminal switch.

(2) Normal and final terminal stopping switches must not control the same switches on the controller unless at least two separate and independent switches are used. At least two of these separate switches must be closed in order to complete the motor and brake circuits for each direction of travel.

WAC 296-96-08200 What are the requirements for the activation and operation of an inclined private residence conveyances for transporting property?

(1) If activation of the conveyance is by key switch, key pad or swipe card, the activation and operation must conform to the requirements of (a) and (b) of this subsection. The department may approve alternative methods of equal security.

(a) The key or code must be entered each time to move the conveyance.

(b) Key-operated switches must be of the spring return type and must be operated by a weatherproof cylinder type lock having not less than five pin or five disc combination with the key removable only when the switch is in the off position.

(2) If activation is provided by a timing circuit that only permits the circuits to be initiated or unlocked for a sufficient amount of time to allow the loading of materials, the operating circuits must automatically relock:

(a) If the conveyance is not activated within its preset period of time;

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(b) When any landing stop button is activated; or

(c) When the car has completed transit to another landing or returns to the departure landing.

(3) Emergency stop switches must be provided on or adjacent to the operating station. Stop switches:

(a) May be of a momentary type;

(b) Must have red handles or buttons and be conspicuously marked "STOP"; and

(c) Must open even if springs fail when springs are used.

(4) After initiation of stopping, the car may not automatically restart. Run condition must be manually initiated.

(5) Design and installation of control and operating circuits must meet the following:

(a) Control systems based upon the completion or maintenance of an electric circuit must not be used for interrupting power and applying machine brakes at terminals, stopping elevators when an emergency stop switch is open or when any electrical protective device operates, or for stopping a machine when the safety applies.

(b) If springs are used to activate switches, contact, or circuit breaking relays to stop the elevator at a terminal, the springs must be a restrained compression type.

(6) Hand rope operation must not be used.

WAC 296-96-08210 What are the requirements for suspension methods?

(1) When a chassis is suspended from a driving machine by a wire rope, a single method of suspension may be used. The suspension means may be any one of the following:

(a) Steel elevator wire rope;

(b) Steel aircraft cable; or

(c) Roller chain conforming to ANSI transmission roller chains and sprocket teeth.

(2) Steel tapes must not be used as a suspension method.

(3) The minimum diameter of hoist ropes or cables must be 1/4 inch galvanized elevator wire rope and 3/16 inch aircraft cable.

(4) Factor of safety:

(a) The minimum factor of safety for a suspension method is 5 based upon the rope tension while elevating the elevator carrying its rated load.

(b) In no case, must the rated breaking strength of the rope be less than 4,000 pounds.

(5) The contact arc of a wire rope on a traction sheave must be sufficient to produce adequate traction under all load conditions.

(6) All wire ropes anchored to a winding drum must have at least one full turn of rope on the drum when the car or counterweight reaches its over-travel limit.

(7) The winding-drum ends of car and counterweight wire ropes must be secured by:

(a) Clamps on the inside of the drum;

(b) Return loop;

(c) Properly made individual tapered babbitted sockets; or

(d) Properly attached fittings recommended by wire rope manufacturers. U-bolt type clamps must not be used.

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(8) The ends of wire ropes must be fastened to cars or counterweights by:

(a) Return loop;

(b) Properly made individual tapered babbitted sockets that conform to ASME A17.1 requirements (The diameter of the hole in the small end of the socket must not exceed the nominal diameter of the rope by more than 3/32 inch.); or

(c) Properly attached fittings recommended by wire rope manufacturers. U-bolt type clamps must not be used.

(9) Rope repair:

(a) Car and counterweight wire ropes cannot be lengthened or repaired by splicing.

(b) If a single wire rope in a set is worn or damaged and needs to be replaced, the entire set must be replaced.

(10) A metal or plastic data tag must be securely attached to one of the wire rope fastenings each time the ropes are replaced or reshackled. The data tag must include:

(a) The diameter of the ropes in inches; and

(b) The manufacturer's rated breaking strength.

WAC 296-96-08215 What are the requirements for controllers?

All controllers must be labeled and listed. In addition, controller covers must be locked.

WAC 296-96-08220 What are the requirements for traveling cables?

(1) All traveling cables must conform to the NEC in effect at the time of installation or major alteration.

(2) Where circuits through the traveling cable(s) exceed 30 volts, a means must be provided to stop the power automatically if the traveling cables part.

WAC 296-96-08230 What requirements apply to electrical wiring?

(1) All wiring must conform to the NEC in effect at the time of installation or major alteration.

(2) If a driving machine is mounted on the conveyance chassis, the electrical connections between the conveyance and the power source must be able to stop power if a traveling cable parts.

(3) All electrical connections between the conveyance chassis and the stationary connections must be insulated flexible conductors conforming to the applicable articles of the NEC relating to Elevators, Dumbwaiters, Escalators, Moving Walks, Wheelchair Lifts, and Stairway Chair Lifts.

(4) An elevator mechanic employed by an elevator contractor may perform electrical work from the electrical disconnect to and including the elevator operating control systems.

WAC 296-96-08240 What are the requirements for track supporting structures?

All supporting structures must meet the local building codes.

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WAC 296-96-08250 What additional requirements apply to inclined private residence conveyances for transporting property?

(1) All inclined private residence conveyances for transporting property must be equipped with:

(a) A manual method capable of moving the conveyance in accordance with ASME A17.1; and

(b) A machine brake with a lever to release the brake allowing use of the manual method.

(2) Machinery spaces must be protected from weather and accidental contact. Machinery space must be locked.

(3) Metal signs stating "NO RIDERS" in two-inch letters must be conspicuously posted and permanently attached to the conveyance and at each landing.

PART C4 - TEMPORARY HOISTS

Personnel Hoists

WAC 296-96-09001 What regulations apply to personnel hoists?

All personnel hoist installations, maintenance, repair and tests must comply with the American National Standard Institute ANSI A10.4-2007 edition Safety Requirements for Personnel Hoists and Employee Elevators for Construction and Demolition Operations.

EXCEPTION: *Lifts and hoists for persons and material that are erected temporarily for use during construction and maintenance work and are designed in one of the following ways:*
(1) Powered platforms used for and temporarily constructed in conjunction with exterior work on building facades or to erect scaffolding, not intended to move personnel or material from one landing to another. Not intended to move personnel or materials into or out of a building or structure; and
(2) Portable self-propelled lifts used by workers.

WAC 296-96-09002 May a drop plate be used for temporary hoists?

Drop plates for temporary hoists may be allowed provided that they are permanently attached to the elevator and the elevator may not operate unless the drop plate is retracted.

WAC 296-96-09003 What are the requirements for landing gates?

Landing gates must be provided with electrical gate switches.

WAC 296-96-09004 Do jumps (increased travel) have to be inspected?

Yes. Personnel hoists that have been increased in height (jumped) must be inspected before being allowed to run to the new landings.

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***Material* Hoists**

WAC 296-96-10001 What regulations apply to material hoists?

All material hoist installations, maintenance, repair, and tests must comply with the American National Standard Institute ANSI A10.5-1992 edition Safety Requirements for Material Hoists.

EXCEPTION: *Lifts and hoists for material that are erected temporarily for use during construction work only and are designed in one of the following ways:*
(1) Powered platforms used for and temporarily constructed in conjunction with exterior work on building facades or to erect scaffolding, not intended to move material from one landing to another; and
(2) Portable lifts for material only.

WAC 296-96-10002 Do jumps (increased travel) have to be inspected?

Yes. Material hoists that have been increased in height (jumped) must be inspected before being allowed to run to the new landings.

PART C5 - ADDITIONAL TYPES OF CONVEYANCES

Belt Manlifts

WAC 296-96-11001 What regulations apply to belt manlifts?

WAC 296-96-11016 through 296-96-11080 apply to all existing belt manlifts.

- Belt manlifts installed between July 1, 2004, and January 1, 2008, must meet the requirements in ASME A90.1-1997.
- *Belt manlifts installed between January 1, 2008, and December 31, 2013, must meet the requirements in ASME A90.1-2009*.

After the effective date of these rules all belt manlift installations and alterations must meet ASME A90.1-*2009*.

All belt manlifts must be maintained, inspected and tested to conform to section 8 and appendix II of ASME A90.1-*2009*.

Maintenance inspection report shall be kept in a secure location within the building the belt manlift serves.

WAC 296-96-11010 What are the definitions for belt manlifts?

"Closed type handhold" a cup-shaped handhold with the handgrip surface uncovered in the direction of travel and covered on the opposite run.

"Factor of safety" is the ratio of the ultimate strength of the material used to manufacture a part to the allowable stress on that part when it is subjected to full load operating conditions.

"Handhold" or **"Handgrip"** is the device attached to the manlift belt to assist a passenger in maintaining balance when using the manlift. For the purposes of this chapter, the word "handhold" is used for both "handhold" and "handgrip."

"Limit switch" is a safety device that stops power to the manlift motor and applies the brakes if a loaded step passes the top terminal landing.

"Manlift" is a device using a power-driven, endless belt with attached handholds and steps or platforms to transport people from floor to floor.

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"Open type handhold" is a handhold with a fully uncovered handgrip surface.

"Rated speed" is the operating speed for which a manlift is designed and installed.

"Step" or **"Platform"** is the passenger carrying part of a manlift. For the purposes of this chapter, the word "step" is used for both "step" and "platform."

WAC 296-96-11016 What general requirements apply to belt manlift landings?

(1) Vertical clearance between the floor or mounting platform and the lower edge of the conical guard above it must be at least 7 feet, 6 inches. When this clearance is not possible, access to the manlift must be prohibited and the space where the runway passes through the platform floor must be enclosed.

(2) Floor space adjacent to floor openings must be kept clear and free of obstructions at all times.

(3) Adequate lighting (not less than 5 foot-candle power) must be provided at each floor landing whenever the lift is in use.

(4) The landing surfaces at all entrances and exits must provide safe footing and must have a coefficient of friction of at least 0.5 to help insure safe footing.

(5) Emergency landings must be provided so that the maximum distance a person must travel on the emergency ladder between an emergency landing and a floor landing is 25 feet. Emergency landings must:

(a) Be accessible from both runs of the lift;

(b) Give access to the emergency ladder; and

(c) Be completely enclosed with a standard railing and toeboard.

WAC 296-96-11019 What requirements apply to the guards and cones of belt manlift landings?

(1) On the ascending side of the lift, all landings must have a beveled guard or cone that meets the following requirements:

(a) Where possible, a cone must make an angle with the horizontal of at least 45 degrees. A cone angle of 60 degrees or more must be used where ceiling heights permit.

(b) Where possible, the guard or cone must extend at least 42 inches outward from any belt handhold. A guard or cone must not extend beyond the upper surface of the floor above.

(c) A cone must be built of sheet steel (at least No. 18 U.S. gauge) or any material of equivalent strength or stiffness. The lower edge of a cone must be rolled to a minimum diameter of 1/2 inch. The interior of a cone must be smooth with no protruding rivets, bolts or screws.

(2) All obstructions must be guarded just like floor openings with the same minimum distances observed.

WAC 296-96-11022 What requirements apply to guarding lift entrances and exits?

(1) All manlift floor or landing entrances and exits must be guarded by either a maze (staggered railing) or a handrail equipped with self-closing gates.

(2) When a maze is used:

(a) Maze or staggered openings must not allow direct passage between a platform enclosure and the outer floor space;

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(b) Rails must be located between 2 and 4 feet from the edge of the opening as measured at right angles to the face of the belt; and

(c) At openings, the intersection of the top rail and the end post must form a bend or standard long sweep "ell."

(3) When a handrail is used:

(a) Rails must be standard guardrails with rounded corners, toeboards and meet the guard rail requirements adopted according to chapter 49.17 RCW; and

(b) Gates must have rounded corners, open outward, and be self-closing.

(4) Unless prevented by building design, all entrances and exits at all landings must be in the same relative location.

WAC 296-96-11025 What structural requirements apply to floor opening guards?

Except on the entrance or exit side, floor openings at each landing must be guarded.

(1) The guards must be constructed by one of the following methods:

(a) A standard railing and toeboard;

(b) Panels of wire mesh (not less than No. 10 U.S. gauge);

(c) Panels of expanded metal (not less than No. 13 U.S. gauge);

(d) Panels of sheet metal (not less than No. 13 U.S. gauge); or

(e) Metal on a frame of either angle iron (at least 1 1/4 by 1 1/8 inch) or 1 1/4 inch iron pipe.

(2) When a belt manlift is installed in a stairwell, a standard guardrail must be placed between the floor openings and the stairway.

(3) Rails or guards must be:

(a) At least 42 inches high on the up-running side and 66 inches high on the down-running side; and

(b) Be located not more than one foot from the edge of the floor opening.

(4) If a guardrail is used, the section of the guard above the rail may be constructed:

(a) According to WAC 296-96-10025(1); or

(b) Using either vertical or horizontal bars capable of rejecting a 6-inch diameter ball.

WAC 296-96-11028 What structural requirements apply to floor landing guards?

Expanded metal, sheet metal or wooden guards must be installed on each floor landing to prevent people from placing their hands in areas where step-rollers operate. These guards must be installed on each exposed side of the lift and extend from the floor to a height of 7 feet.

WAC 296-96-11031 What requirements apply to bottom landings?

(1) Bottom landing clear areas:

(a) Where possible, the clear area of a bottom landing must be at least the size of the area enclosed by guardrails on the floors above;

(b) A clear area must be free of stairs and ladders; and

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(c) If a wall on the bottom landing is located in front of the down-running side of the belt, it must be installed at least 48 inches away from the belt face.

(2) The lowest landing served by the lift must support the lower (boot) pulley installation.

(3) A mounting platform must be installed on the lowest landing unless the landing floor is at or above the point at which the upper surface of the belt steps assume or leave a horizontal position.

(4) If a mounting platform is installed, it must be located in front of or to one side of the up/down run.

WAC 296-96-11034 What requirements apply to top clearance?

(1) When the center of the head pulley is more than 6 feet above the top landing, an emergency landing and ladder must be installed.

(2) The location of the emergency landing must be 24 inches below the center of the head pulley.

WAC 296-96-11037 What requirements apply to emergency exit ladders?

Emergency exit ladders must be:

(1) A fixed metal type;

(2) Accessible from either the "up" or "down" path of the lift;

(3) Installed when the vertical distance between landings exceeds 20 feet; and

(4) Constructed to comply with current general safety standards except enclosed cages need not be built.

WAC 296-96-11040 What lighting requirements apply to belt manlifts?

(1) When a lift is in operation, both runs must be illuminated at all points with an intensity of at least one foot-candle.

(2) Lighting control in runways must be:

(a) Circuits tied permanently into the building circuits (no switches);

(b) Near the starting switch that controls the lift motor; or

(c) Separate switches located on every landing and with each switch having the capability of turning on all lights throughout the entire runway.

WAC 296-96-11045 What drive machine requirements apply to belt manlifts?

(1) Belt manlifts must be driven either by directly connected machines or by multiple "V" belts.

(2) Cast iron gears must not be used.

(3) Brakes:

(a) On direct connected machines, the brake must be mechanically applied to the motor shaft and released electronically.

(b) On "V" belt driven machines, the brake must be mechanically applied to the input shaft and released electronically.

(c) All brakes must be capable of stopping and holding the lift while carrying its rated capacity.

(4) Belts:

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(a) Belts may not have more than one splice per belt.

(b) There shall not be more than one inch of space between the opposing ends of the belt.

(c) A belt manlift that has evidence of severe belt damage must be removed from service immediately. Belts with severe belt damage may not be repaired and/or returned to service. "Severe belt damage" means that the protective outer cover of a belt becomes cut, cracked or separated exposing damaged inner fabric, and such damage extends across the full width of the belt, spans between adjacent bolt holes, or damage goes through the entire thickness of the inner fabric. A torn belt is also considered severe.

Exception: A lap splice that has become cracked or damaged may be converted to a butt splice and returned to service, provided that the damaged area on the splice is completely removed.

(d) The conversion of a lap splice to a butt splice does not constitute a repair.

(e) A belt that has evidence of superficial belt cover damage while in use on a manlift is not required to be replaced. "Superficial belt cover damage" means that the protective outer cover of a belt becomes scratched, cut or cracked exposing the inner fabric. Such damage may not be continuous across the full width of the belt.

(5) Belts fastening:

(a) Belts must be fastened either by a lap splice or a butt splice with a strap on the belt side opposite the pulley.

(b) For lapped splices on manlifts with travel distances not exceeding 100 feet, the overlap of the belt at the splice must be at least 3 feet; or

(c) For lapped splices exceeding 100 feet, the overlap at the splice must be at least 4 feet.

(d) For butt splices on manlifts with travel distances not exceeding 100 feet, the strap must extend at least 3 feet on one side of the butt; or

(e) For butt splices not exceeding 100 feet, the strap must extend at least 4 feet on one side of the butt.

(f) For 12-inch belts, the joint must be fastened with a minimum of 20 special elevator bolts with minimum diameters of 1/4 inch. To effectively cover the belt joint area, these bolts must be arranged symmetrically in 5 rows.

(g) For a 14-inch belt, the minimum number of bolts is 23.

(h) For a 16-inch belt, the minimum number of bolts is 27.

(6) All installations must use machines designed and constructed to hold the driving pulley when there is shaft failure or overspeed.

WAC 296-96-11048 What is an acceptable operating speed for a belt manlift?

The maximum belt speed of a belt manlift is 80 feet per minute. No belt manlift may be installed that exceeds this maximum speed limit, and all belt manlifts in a given location should run at approximately the same speed.

WAC 296-96-11051 What are the construction requirements for steps?

(1) Measured from the belt to the edge of the step, the minimum depth of a step is 12 inches and the maximum depth is 14 inches.

(2) Step width cannot be less than the width of the belt to which it is attached.

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(3) Measured from the upper surface of one step to the upper surface of the next step above, the distance between steps must be at least 16 feet and the steps must be equally spaced along the belt.

(4) A step must be attached to the belt so its surface approximates a right angle with the face of the belt enabling the step to travel in basically a horizontal position with the "up" and "down" path of the belt.

(5) The working (upper) surface of a step must be made of either a material having nonslip characteristics (possessing a coefficient of friction of not less than 0.5) or be completely covered with a securely attached nonslip tread.

(6) Step supports (frames) and guides must be sufficiently strong to prevent:

(a) The disengagement of any step roller;

(b) Any appreciable misalignment; or

(c) Any visible deformation of the step or its support.

(7) Steps must have corresponding handholds.

(8) If a step is removed for any reason, the handholds immediately above and below it must be removed before the lift resumes operation.

WAC 296-96-11054 What requirements apply to the location and construction of handholds?

(1) Handholds attached to the belt must be provided and installed so that they are not less than 4 feet nor more than 4 feet 8 inches above the step tread. These handholds must be available on both the "up" and "down" run of the belt.

(2) All handhold grab surfaces must be at least 4 1/2 inches in width. Fastenings must not come within one inch of the belt edge.

(3) All handholds must be capable of withstanding, without damage, a 300 pound load applied parallel to the belt run.

(4) All handholds must have corresponding steps. When a handhold is removed for any reason, the corresponding step and handhold for the opposite direction of travel must also be removed before the lift resumes operation.

WAC 296-96-11057 What requirements apply to "up-limit stops"?

(1) Two separate automatic stop devices must be provided to cut off the power and apply the brake when a loaded step passes the upper terminal landing. One of these devices must consist of a switch mechanically operated by the belt or stop roller. The second device must consist of any of the following:

(a) A roller switch located above but not in line with the first switch;

(b) A photocell and light source (an "electric eye"); or

(c) A switch activated by a lever, bar, rod or plate.

(i) If a plate is used, it should be positioned above the head pulley so it barely clears a passing step.

(ii) If a bar is used, the bar must be of the "breakaway" type.

(2) The stop device must stop the lift before a loaded step reaches a point 24 inches above the top terminal landing.

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(3) Once the lift has stopped, the automatic stop device must be manually reset. Therefore, this device must be located on the top landing where the reset person has a clear view of both the "up" and "down" runs of the lift; and it must be impossible to reset from a step.

(4) Electric stop devices must meet the following requirements:

(a) All electric switches that directly open the main motor circuit must be multiple type switches;

(b) Photoelectric devices must be designed and installed so that failure of the light source, the light sensitive element or any vacuum tube used in the circuit will result in shutting off power to the driving motor;

(c) In areas where flammable vapors or dust may be present, all electrical installations must be in accordance with the NEC requirements for those installations; and

(d) All controller contacts carrying main motor current must be copper to carbon types unless the circuit is simultaneously broken at two or more points or the contacts are immersed in oil.

WAC 296-96-11060 What requirements apply to emergency stops?

All belt manlifts must have emergency stop devices that:

(1) Are located within easy reach of the "up" and "down" run of the belt;

(2) Stop power to the lift and apply the lift brake when pulled in the direction of travel;

(3) Have a treadle switch (manual reset type) that is located below the lowest landing on the belt's "down" side and, if a person fails to get off at the lowest landing, stops the lift and ejects the person from the step as it approaches the boot pulley;

(4) Are made of cotton rope with a wire center, manila or sisal rope, or metal pipe or tubing. Wire rope cannot be used, unless covered with marlin. Rope stops must be at least 3/8 inch in diameter; and

(5) An emergency stop may be used for normal stopping and starting if the lift does not run continuously.

WAC 296-96-11066 What are the warning sign requirements?

(1) Instructional signs explaining how to use the belt lift must be:

(a) Conspicuously posted on each landing or stenciled on the belt;

(b) Printed in an easily read style with letters at least one inch in height;

(c) Printed in a color that clearly contrasts with the background surface (for example, white or yellow on black or black on white or gray); and

(d) Examples of instructional signs are:

"Face the belt"

"Use the handhold"

"To stop - Pull rope"

(2) Warning signs and/or lights must include an illuminated sign or red warning light announcing the top floor and must be within easy view of an ascending passenger.

(a) If a sign, it must be located no more than 2 feet above the top terminal landing and printed in block letters (at least 2 inches in height) displaying the words, "Top floor - Get off."

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(b) If a red light, it must have at least a 40-watt rating and be located immediately below the upper terminal landing where it will shine in the belt passenger's face.

(3) There must be conspicuous signs on each landing that read, "Employees only - Visitors keep off," printed in block letters (at least 2 inches in height) in a color that sharply contrasts with the background.

(4) A sign or red light must be conspicuously posted above the bottom landing announcing its approach. These must be:

(a) If a sign, printed in block letters (at least two inches in height) that sharply contrast with the background and reads, "Bottom floor - Get off."

(b) If a light, rated at least forty watts.

(5) An electronic warning buzzer must be installed 5 feet above the bottom landing on the down side of the belt to warn belt riders of the approaching landing. This warning buzzer must be automatically activated by load weight on a step.

WAC 296-96-11070 Can you carry tools and materials on a belt manlift?

(1) No freight or packaged goods may be carried on any manlift;

(2) No pipe, lumber, or other construction materials may be handled on any manlift; and

(3) No tools except those which will fit entirely within a pocket of ordinary working clothes may be carried on any manlift, except as follows:

(a) Tools may be carried in a canvas bag not larger than 11 inches by 13 inches;

(b) The bag must have a leather bottom; and

(c) The bag must have loops or handles to be carried in the passenger's hand while riding the manlift. Shoulder straps are prohibited.

WAC 296-96-11078 What is required for belt manlift inspections?

(1) All manlifts must be inspected by a qualified person, designated by the lift's owner, at least once every 30 days.

(2) The inspection must cover (but is not limited to) the following items:

- Belt and belt tension
- Bottom (boot) and pulley
- Brake
- Clearance
- Drive pulley
- Driving mechanism
- Electrical switches
- Guardrails
- Handholds and fastenings
- Lubrication
- Motor
- Pulley supports
- Rails, rail supports and fastenings

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- Rollers and slides
- Signal equipment
- Steps and fastenings
- Warning signs and lights

(3) A written record must be kept of results of each inspection, and it must be made available to all inspectors. This information must be recorded under the monthly portion of the test log required by Appendix A of ASME A90.1-1997.

(4) For purposes of this section "adequate lighting" means five-foot candles.

WAC 296-96-11080 Under what conditions is a five-year test administered?

A five-year test of the belt manlift must be conducted, and the test must be administered under the following conditions:

(1) Qualified people will conduct the test. A qualified person is either:

(a) An elevator mechanic licensed in the appropriate category of the conveyance being tested;

(b) The representative of a firm that manufactured the particular belt manlift who holds a current temporary mechanic's license in this state; or

(c) The representative of a firm that manufactured the particular belt manlift who is working under the direct supervision of an elevator mechanic licensed in the appropriate category of the conveyance being tested.

(2) (a) The up capacity of the belt manlift must be tested with two hundred pounds on each horizontal step. During the up-run portion of the test the belt manlift must not show appreciable slip of the belt when standing or running at rated speed.

(b) The down capacity of the belt manlift must be tested with two hundred pounds on each horizontal step. During the down-run portion of the test the belt manlift must not show appreciable slip of the belt when standing or running at the rated speed.

The brake shall stop and hold the belt with test load within a maximum of twenty-four inches of travel.

(3) After the five-year test has been performed a tag indicating the date of the test and name of the company performing the test must be attached in a visible area of the drive motor machine.

Electric Manlifts

WAC 296-96-13135 What are the requirements for electric manlifts?

WAC 296-96-13135 through 296-96-13171 are the minimum requirements for all existing electric manlifts.

WAC 296-96-13136 What are the minimum maintenance requirements for electric manlifts?

Owners of electric manlifts are responsible for ensuring that:

(1) Elevators and their parts are maintained in a safe condition;

(2) All devices and safeguards required by these regulations are maintained in good working order; and

(3) Maintenance, examinations, and safety tests be performed and documented to the applicable sections of WAC 296-96-23601 through 296-96-23610.

DRAFT future suggested language

WAC 296-96-13139 What structural requirements apply to hoistway enclosures and landings?

(1) A hoistway must be fully enclosed, or enclosed on all landings to a height of six feet above the landing floor or six feet above the highest working level or stair level adjacent to the hoistway.

(2) Perforated enclosures can be used where fire resistance is not required. However, such an enclosure must use at least No. 13 U.S. gauge steel wire, if a steel wire grill or expanded metal grill type, and it must have openings that reject a one-inch diameter ball.

(3) All landings must be properly and adequately lighted.

(4) For purposes of this section "adequate lighting" means five-foot candles.

WAC 296-96-13143 What structural requirements apply to hoistway gates and doors?

(1) Gates may be constructed of wood slat, steel wire grill, expanded metal or solid material provided that all openings reject a two-inch diameter ball and resist a two hundred fifty pound horizontal thrust.

(a) Steel wire and expanded metal gates must be constructed of at least No. 13 U.S. gauge steel.

(b) Wood slat gates must have slats at least two inches wide and one-half inch thick, nominal size.

(c) Solid material gates must be constructed of at least one-eighth inch reinforced sheet steel or one-half inch plywood.

(2) Gates may be horizontal swinging, vertical or horizontal sliding or biparting types, and must:

(a) Span the full width of the elevator car;

(b) Extend from one inch above the landing floor to at least six feet above it;

(c) Not swing into the hoistway; and

(d) Be equipped with interlocks or mechanical locks and electric contacts that prevent the gate from opening when a car is away from a landing.

(3) Hoistway doors must be closed before the car can leave the landing. Once the car leaves the landing, the door must be latched so that it will not open when the elevator is not at the landing.

WAC 296-96-13145 What structural requirements apply to elevator cars?

Elevator cars must be fully enclosed to the car height or to a height of at least six feet six inches, whichever is greater.

(1) If constructed of solid materials, cars must be capable of withstanding a horizontal thrust of seventy-five pounds while deflecting no more than one-quarter inch.

(2) If constructed of perforated materials, all openings must be capable of rejecting at least a one-inch diameter ball.

(3) Cars frames must be of substantial metal or wood construction.

(a) Metal frames must have a safety factor of four.

(b) Wood frames must have a safety factor of six.

(c) Wood frames must be constructed with gussets and bolts secured with large washers, lock washers and nuts.

DRAFT future suggested language

(4) Cars must have platforms whose inside dimensions do not exceed thirty inches on each side (six and one-quarter square feet area).

(5) Cars must have substantial protective tops. These tops:

(a) May have hinged front halves;

(b) May be made of No. 9 U.S. wire-gauge screen, No. 11 gauge expanded metal, No. 14 gauge sheet steel, or one-quarter inch or heavier plywood.

(c) If made of wire screen or metal with openings, must reject a one-half inch diameter ball.

WAC 296-96-13147 What structural requirements apply to elevator doors?

All elevators must have car doors, except on fully enclosed hoistways equipped with hoistway gates and enclosed from the top of the hoistway opening to the ceiling on the landing side.

(1) Car doors must be:

(a) Constructed of solid or perforated material which is capable of resisting a seventy-five pound thrust without deflecting one-quarter inch. If perforated material is used, it must reject a one-inch diameter ball.

(b) Biparting or otherwise horizontally swung provided the door swings within the elevator car.

(c) Equipped with a positive locking latch device that resists a two hundred fifty pound thrust.

(2) Interlocks or a combination consisting of mechanical locks and electric contacts must be provided for all elevators having car doors. An electrical/mechanical interlock must be provided on car gates on elevators in unenclosed hoistways unless a safe means of self-evacuation is provided. Such means must be approved by the department.

WAC 296-96-13149 What are the structural requirements for counterweights, counterweight enclosures, and counterweight fastenings?

All counterweights must be fully enclosed at landings or at the path of travel.

(1) At the bottom of a counterweight enclosure, there must be an inspection opening large enough to allow the inspection of cable fastenings, counterweight and buffer.

(2) Rectangular shaped counterweights must be secured by at least two, half-inch mild steel bolts with lock nuts.

(3) Round counterweights must be fastened with a center bolt at least three quarter inch in diameter and secured with a lock nut.

(4) All bolt eyes must be welded closed.

(5) Cable fastenings shall be by babbitted tapered elevator sockets or other acceptable methods. If cable clamps are used, a minimum of three cable clamps must be provided. U-shaped clamps shall not be acceptable.

WAC 296-96-13151 What construction requirements apply to car guide rails?

Each electric manlift must be equipped with at least two guide rails. Guide rails must:

(1) Extend at least six inches beyond the maximum travel distance of the car with the buffers compressed.

(2) Be securely fastened to a vertical support for the full length of the elevator's travel.

(3) Be constructed of vertical grain fir, angle iron:

(a) If constructed with vertical grain fir, the rails must be at least one and one-half inch by one and one-half inch and not vary in thickness by more than three-sixteenths inch on brake surfaces.

DRAFT future suggested language

(b) If constructed with angle iron, the angle iron must be at least one-quarter inch by two inch by two inch.

(4) Be able to resist a two hundred fifty pound horizontal thrust.

(5) Be able to resist more than one-half inch total deflection when the car safety is applied.

WAC 296-96-13153 What construction requirements apply to hoisting ropes?

There must be at least two hoisting ropes. Each rope must be:

(1) Made of a good grade of elevator traction wire rope;

(2) At least three-eighths inches in diameter and possessing a safety factor of five;

(3) Fastened by babbitted tapered elevator sockets or other acceptable methods. If cable clamps are used, a minimum of three cable clamps must be provided. U-shaped clamps shall not be acceptable.

(4) Long enough so the car platform will be no more than six inches above the top landing when the counterweight buffer is fully compressed, and at least six inches from the counterbalance sheave when the car buffer is fully compressed.

WAC 296-96-13155 What are the requirements for a hoistway space?

There must not be habitable space below an elevator hoistway or counterweight shaft unless the floor above the space can withstand an impact one hundred twenty-five percent greater than the impact generated by a free falling car or counterweight falling from the full height of the hoistway.

WAC 296-96-13157 What requirements apply to car safeties?

All cars suspended or operated from overhead machinery must be equipped with an approved car safety capable of stopping and holding the car while carrying its rated load.

(1) Car safeties must be mechanically operated and not be affected by any interruptions in the electrical circuit.

(2) Car safeties and governor controlled safeties must operate automatically and the control circuit must be broken in the event of cable breakage.

(3) A no-load annual safety test must be performed and a tag with the date and company conducting the test must be attached to the governor with a wire and seal. A safety tag must also be permanently affixed to the inside of the car.

(4) A five-year full load test must be performed and a safety tag with the date and company conducting the test must be permanently attached to the governor with a wire and seal. A safety tag must also be permanently affixed to the inside of the car. Documentation must be submitted to the department.

Qualified people will conduct the test. A qualified person is either:

(a) An elevator mechanic licensed in the appropriate category for the conveyance being tested;

(b) The representative of a firm that manufactured the particular conveyance and who holds a current temporary mechanic's license in this state; or

(c) The representative of a firm that manufactured the particular conveyance who is working under the direct supervision of an elevator mechanic licensed in the appropriate category for the conveyance being tested.

(5) Separate safety tags must be used to distinguish the no-load annual safety test and the five-year full load test.

DRAFT future suggested language

WAC 296-96-13159 What requirements apply to brakes?

All elevators must be equipped with brakes that engage mechanically and release electrically.

(1) Brakes must be located on the final drive of all elevator machines.

(2) The brake activating circuit must be designed so that interruption of power by the slack cable switch, control switch, and limit switches activate the brake.

(3) The brakes must activate under short circuit, phase failure, or reverse phase conditions.

WAC 296-96-13161 What requirements apply to car controls and safety devices?

(1) Car controls may be automatic push button, constant pressure push button or momentary push button types. **Hand rope and car switch controls must not be used.**

(2) If a car is not equipped with constant pressure push button controls, then it must be equipped with a manually operated emergency stop switch that is clearly marked "emergency stop."

(3) Terminal limiting devices must operate independently of car controls and must automatically stop the car at the top and bottom terminal landings.

(4) All winding drum machine type elevators must be equipped with top and bottom final limit switches.

(5) A manual-reset slack rope device that breaks the circuit to the drive motor and brake must be installed on all winding drum type machines.

(6) All electric manlifts lifts must be equipped with an overspeed governor that must not exceed one hundred seventy-five feet per minute and must deenergize the brake control and motor drive circuits simultaneously when the car safety mechanism is activated.

(7) Car speeds for electric lifts must not exceed one hundred twenty-five feet per minute.

(8) Elevator controls and disconnects must be accessible and marked.

WAC 296-96-13167 What requirements apply to elevator driving machines?

(1) Elevator machines must be driven by approved-type units.

(a) On direct drive or approved worm gear driven type, a mechanically actuated, electrically released brake must be installed on the driving unit.

(b) On V belt driven types, a minimum of four belts, one-half inch minimum size, must be used to transmit power from the motor to the drive shaft and a mechanically activated, electrically released brake must be installed on the final drive shaft.

(2) Wherever practical, elevator machines must be installed on the top side of the supporting structure.

(3) All components of the driving mechanism and parts subject to stress involved in suspending the load or related equipment must be designed to withstand eight times the total weight to be suspended, including load, counterweight, car and cables.

(4) Gears must be made of steel or equivalent material. Cast iron gears are prohibited.

(5) A working platform, with railings complying with the applicable requirements adopted according to chapter 49.17 RCW, shall be provided to allow for safely working on equipment.

(6) A light with a switch must be located near the elevator driving machine or the machinery space.

DRAFT future suggested language

(7) A means to lockout/tagout the elevator equipment must be located near the elevator driving machine or the machinery space.

(8) The elevator machinery shall be protected from the weather.

(9) All sheaves must be appropriately guarded per the requirements adopted according to chapter 49.17 RCW.

(10) Changes based on the requirement found in subsections (5) through (9) of this section must be completed within two years of the effective date of these rules.

WAC 296-96-13169 What requirements apply to car and counterweight buffers?

(1) All elevator cars must be equipped with adequate car buffers.

(2) All elevators using counterweights must be equipped with adequate counterweight buffers.

WAC 296-96-13171 What other requirements apply to electric manlifts?

(1) Adequate lighting must be provided at each landing and in the shaftway.

(2) A sign bearing the following information must be posted in a conspicuous place within the car:

(a) Total load limit in pounds;

(b) **"Maximum capacity-one person";** and

(c) **"For authorized personnel use only."**

(3) A properly working fire extinguisher must be present in each car.

(4) For purposes of this section "adequate lighting" means five-foot candles.

Hand-Powered Manlifts

WAC 296-96-14010 What is the scope and application of the department's hand-powered manlift rules?

WAC 296-96-14010 through 296-96-14080 apply to the installation, design, and use of all one-person capacity, hand powered, counterweighted elevators that must be inspected according to chapter 70.87 RCW.

WAC 296-96-14011 What are the minimum maintenance requirements for hand powered manlifts?

Owners of hand powered manlifts are responsible for ensuring that:

(1) Elevators and their parts are maintained in safe condition;

(2) All devices and safeguards required by these regulations are maintained in good working order; and

(3) Maintenance, examinations and safety tests are performed and documented to the applicable sections of WAC 296-96-23601 through 296-96-23610.

WAC 296-96-14020 What construction requirements apply to hoistway landings and entrances?

(1) Every hoistway landing must be protected on all sides other than the landing opening side with a standard guard rail and intermediate guard rail. All landing except the bottom landing must have a toe board installed on all sides except the landing opening side.

(2) All hoistway entrances must be not less than 6 feet 6 inches in height and in no case may the width exceed the corresponding car dimensions.

Draft future suggessted language

(3) All hoistway entrances must be provided with an approved maze or with a hoistway gate which must:

(a) Be at least 36 inches in height;

(b) Extend downward to within one inch of the landing sill;

(c) Be of the self-closing type, designed to swing horizontally out from the hoistway and closing against a full jam stop;

(d) Be located within 4 inches of the edge of the landing sill;

(e) Have a "DANGER" sign conspicuously posted on the landing side of the hoistway gate; and

(f) Withstand a 250 pound horizontal thrust.

(4) On new installations, all projections extending inwardly from a hoistway enclosure at the entrance side of the car platform must be beveled and guarded on their underside by a smooth solid material set at an angle of not less than 60 degrees nor more than 75 degrees from the horizontal when cars are not equipped with gates.

WAC 296-96-14025 What are acceptable hoistway clearances?

(1) The minimum clearance between a car side and the hoistway enclosure is one inch.

(2) The clearance between a car platform and a landing sill must be at least 1/2 inch but not more than 1 1/2 inches.

WAC 296-96-14030 Can there be a habitable space beneath an elevator hoistway or counterweight shaft?

There must not be habitable space below an elevator hoistway or counterweight shaft unless the floor above the space can withstand the impact of a freely falling hoistway car or counterweight dropping on it.

WAC 296-96-14035 What construction requirements apply to hoistway guide rails?

(1) There must be a minimum of two opposing guide rails extending to a point six inches beyond the full height of travel of the car when the counterweight buffer is fully compressed.

(2) All rails must be attached by bolts, lag screws or other approved methods to a vertical supporting member which must not exceed 1/2 inch deflection with the application of a 250 pound horizontal thrust at any point.

(3) Wood guide rails must be at least 1 1/2 inch by 1 1/2 inch vertical grain fir or equivalent and must not vary more than 3/16 inch in thickness on the sides which the brakes contact. All joints must be kept smooth and even.

WAC 296-96-14040 What installation requirements apply to buffer springs?

(1) All new installations must have spring buffers installed below the car and counterweights.

(2) All installations must have spring buffers attached below the counterweights.

(3) Hoisting ropes must not allow a car platform to be more than 8 inches above the top landing when the counterweight buffer spring is fully compressed.

WAC 296-96-14045 What construction specifications apply to hoistway cars?

(1) The car must be built to the following specifications:

(a) The car platform must be no greater than 30 inches on either side (6.25 square feet area).

DRAFT future suggessted language

(b) The car frame and platform must be of steel or sound seasoned wood construction and be designed with a safety factor of not less than 4 for metal and 6 for wood, based on a maximum capacity of 250 pounds.

(c) All frame members must be securely bolted, riveted or welded and braced. If bolted, lock washers or lock nuts must be used.

(d) Where wooden frame members are bolted, large washers or metal plates must be used to minimize the possibility of splitting or cracking the wood.

(2) The sides of the car must be enclosed by a minimum of 2 safety guard rails with the top rail not less than 36 inches nor more than 42 inches from the car floor. Rails must sustain a horizontal thrust of 250 pounds. If solid material is used, it must be smooth surfaced and not less than 1/2 inch thickness, if wood; not less than 16 gauge thickness, if steel; and must be constructed from the car floor to a height of not less than 3 feet.

(a) Where the hoistway is not enclosed on the entrance side of the car, a self-locking or drop bar gate must be provided. The car gate may be of the folding type, horizontally swung, provided it swings into the car enclosure. Drop bar gates must be of two bar construction, parallelogram type, and conform to requirements specified for car guard rails.

(b) The car gate must drop into locking slots or be provided with a positive locking type latch capable of withstanding 250 pounds horizontal thrust.

(3) Every car must have a substantial protective top. The front half may be hinged. The protective top may be made from No. 9 U.S. wire gauge screen, No. 11 gauge expanded metal, No. 14 gauge sheet steel, 3/4 inch or heavier plywood. If made of wire screen or metal, the openings must reject a 1/2 inch diameter ball.

(4) Every car must have a proper rack to hold the balance weights. Weights must be contained in the proper rack when the car is in motion.

(5) A sign bearing the following information must be conspicuously posted within the car:

(a) Total load limit in pounds;

(b) "Maximum capacity one person"; and

(c) "For authorized personnel use only."

(6) Every car must be equipped with a spring loaded foot brake which:

(a) Operates independently of the car safeties;

(b) Operates in both directions and will stop and hold the car and its load; and

(c) Locks the car in its position automatically whenever the operator releases the pressure on the foot pedal.

(7) Every car must be equipped with a car safety device which:

(a) Applies to the sides of the main guide rails; and

(b) Stops and holds the car and its load immediately when the hoisting rope breaks.

(8) Every car must have a minimum clearance of 6 feet 6 inches from the top of the car platform to the bottom edge of the crosshead or any other obstruction.

(9) A tool box with minimum dimensions of 4 inches long by 3 inches deep must be provided and firmly attached to the car structure.

DRAFT future suggested language

WAC 296-96-14050 What are the requirements for assembly, installation, and operation of sectional counterweights?

(1) The assembly of sectional counterweights must conform to the following requirements:

(a) Rectangular counterweights must be held together by at least two tie rods 1/2 inch in diameter fastened with lock washers and double nuts or other approved means.

(b) One 3/4 inch rod may be used to hold the sections of a round counterweight together. Any additional sections or weights must be secured by an approved means.

(2) The eye bolt for the rope hitch must be attached to the counterweight in a manner that will prevent the eye bolt from coming loose. The eye of eye bolts must be welded to prevent it from opening.

(3) Every counterweight runway must be enclosed with substantial unperforated material for its full distance of travel. Inspection openings must be provided at either the top or bottom of the counterweight runway. These openings must be substantially covered at all times except when actually being used for inspection of counterweight fastenings.

(4) Workers must load the counterweight for the proper balance of the heaviest person using the elevator and others must use compensating weights, which must be available, to maintain a balance.

(5) On elevators with travel of 75 feet or more, a compensating chain or cable must be installed to maintain the proper balance of the counterweight to the car and load in all positions.

WAC 296-96-14055 What is the minimum acceptable sheave diameter?

The minimum sheave diameter must be 40 times the diameter of the rope used. For example, a 3/8 inch rope requires a 15 inch sheave.

WAC 296-96-14060 What requirements apply to hoisting ropes?

(1) Hoisting ropes must be of good grade traction elevator wire rope and must:

(a) Be not less than 3/8 inch in diameter.

(b) Provide a safety factor of 5 based on the maximum weight supported.

(c) Be of sufficient length to prevent the counterweight from striking the overhead structure when car is at the bottom, and prevent the car from striking the overhead before the counterweight is at its lower limit of travel.

(d) Cable fastenings shall be by babbitted tapered elevator sockets or other acceptable methods approved by the department. If cable clamps are used, a minimum of three cable clamps must be provided. U-shaped clamps shall not be acceptable.

(e) Where passed around a metal or other object less than three times the diameter of the cable, have a thimble of the correct size inserted in the eye.

(2) Approved sockets or fittings with the wire properly turned back and babbitted may be used in place of clamps noted in subsection (1)(d) of this section.

DRAFT future suggessted language

WAC 296-96-14065 What requirements apply to operating ropes?

The operating rope must be of soft hemp or cotton at least 3/4 inch in diameter. It must be securely fastened at each end and must be in proper vertical alignment to prevent bending or cutting where it passes through the openings in the platform or the protective top of the car.

WAC 296-96-14070 Where must hoistway lights be located?

Adequate lighting must be installed and operating at each landing and in the shaftway.

For purposes of this section "adequate lighting" means five-foot candles.

WAC 296-96-14075 What is the factor of safety for overhead supports?

The overhead supporting members must be designed, based upon impact loads, with a safety factor of:

(1) Nine if wood; and

(2) Five if steel.

WAC 296-96-14080 What additional requirements apply to the installation and operation of hand powered manlifts?

(1) Only employees and other authorized personnel may ride in a lift car.

(2) Escape ladders must be installed extending the full length of the hoistway and must be located in a position so that in an emergency a person can safely transfer from the car platform to the ladder. Transfer is considered safe when a person can maintain three points of contact while making the transfer. An "IMPAIRED CLEARANCE" sign must be posted at the bottom of a ladder when the face of the ladder is less than 30 inches from any structure.

(3) An automatic safety device which will prevent the car from leaving the landing until manually released by the operator must be installed at the bottom landing.

(4) A fire extinguisher in proper working condition must be available in the car.

(5) A five-year full load test must be performed and a tag indicating the date and the company conducting the test must be permanently attached with a wire and a seal. Documentation of the test submitted to the department. Manlifts with wooden rails must have a no-load drop test performed on the equipment.

Qualified people will conduct the test. A qualified person is either:

(a) An elevator mechanic licensed in the appropriate category for the conveyance being tested;

(b) The representative of a firm that manufactured the particular conveyance and who holds a current temporary mechanic's license in this state; or

(c) The representative of a firm that manufactured the particular conveyance who is working under the direct supervision of an elevator mechanic licensed in the appropriate category for the conveyance being tested.

(6) A no load annual safety test must be performed and a tag indicating the date and company conducting the test must be attached to the conveyance with a wire and seal. A safety tag must also be permanently affixed to the inside of the car.

Casket Lifts

DRAFT future suggested language

WAC 296-96-16010 What is the scope of the department's casket lift regulations?

(1) The rules in this section, WAC 296-96-16010 through 296-96-16240, apply to hoisting and lowering mechanisms equipped with cars that:

(a) Move within guides in a substantially vertical direction;

(b) Have a maximum net inside area of 28 square feet;

(c) Have a maximum total internal height of 4 feet and a maximum total internal width of 3 1/2 feet; and

(d) Utilize a series of rollers as a platform to exclusively carry caskets.

(2) A hoistway, hoistway enclosure, and related construction that are in substantial compliance with Part 1, Section 100 of the American Standard Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks A17.1 and meet the requirements of these casket lift rules.

WAC 296-96-16011 What are the minimum maintenance requirements for casket lifts?

Owners of casket lifts are responsible for ensuring that:

(1) The lift and their parts are maintained in a safe condition; and

(2) All devices and safeguards required by these regulations are maintained in good working order.

WAC 296-96-16020 What requirements apply to the location and operation of machine rooms and machinery space?

(1) Machines and control equipment can be located:

(a) Inside a hoistway enclosure, at the top or bottom, without enclosures or platforms; or

(b) Outside a hoistway if enclosed with a noncombustible material to a height of at least 6 feet.

(2) Machines and control equipment located outside the hoistway must be enclosed in enclosures of incombustible material not less than 6 feet high and have a self-closing and locking door. Control equipment located outside the hoistway may be enclosed in metal cabinet equipped with a self-closing and locking door to prevent access by unauthorized persons.

(3) Permanent electric lighting must be provided in all machine rooms and machinery spaces.

WAC 296-96-16030 What equipment can be located in a machine room?

Only machinery and equipment required for the operation of the elevator is permitted in the elevator machine room.

WAC 296-96-16040 What requirements apply to the location of electrical wiring, pipes and ducts in hoistways and machine rooms?

(1) Only electrical wiring raceways and cables directly related to an elevator's operation may be installed inside the hoistway.

(2) Pipes or ducts that convey gases, vapors, or liquids and are not used in connection with the elevator must not be installed in any hoistway, machine room, or machinery space.

3) Machinery and sheave beams, supports, and foundations must comply with the American Standard Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks A17.1, Section 2.9.

DRAFT future suggested language

WAC 296-96-16050 Is a pit required in a casket lift hoistway?

A pit is not required in a casket lift hoistway.

WAC 296-96-16060 What requirements apply to the size and location of hoistway door openings?

(1) The width and height of door openings must not exceed the width and height of the elevator car by more than one inch in each dimension; except one door opening may be of sufficient size to permit installing and removing the car, but must not be more than 4 feet 9 inches in height.

(2) The bottom of the door opening must be not less than 24 inches above the floor.

WAC 296-96-16070 How must hoistway doors be hung?

Hoistway doors must be hung and guided in such a manner that the doors will not be displaced from the guides or tracks when in normal service nor when the doors are subjected to a constant horizontal force of 250 pounds applied at right angles to and approximately the center of the door or to the center of each door section where multisection doors are used.

WAC 296-96-16080 Where must hoistway doors be located?

Hoistway doors must be located so that the distance from the hoistway face of the doors to the landing sill must not be more than 2 1/2 inches.

WAC 296-96-16090 What requirements apply to hoistway doors locks?

All hoistway doors must be equipped with a combination mechanical lock and electric contact.

WAC 296-96-16100 How should space beneath a hoistway be protected?

Where the space below the hoistway is used for a passageway or is occupied by a people, or if unoccupied is not secured against unauthorized access, the cars and counterweights must be equipped with safeties which may be operated as a result of the breaking of the suspension means. Safeties may be of the inertia type without governors.

WAC 296-96-16110 What requirements apply to car doors and gates?

There must not be more than two entrances to the car.

(1) Each entrance must be provided with a car door or gate which when in a fully closed position must protect the full width and height of the car entrance opening.

(2) Collapsible type gates, when in a fully closed position, must reject a 4 1/2 inch diameter ball.

WAC 296-96-16120 What requirements apply to car enclosures?

(1) Elevator cars must be permanently enclosed on all sides and the top.

(2) The enclosure must be securely fastened to the car platform and so supported that it cannot loosen or become displaced in ordinary service.

DRAFT future suggessted language

(3) The enclosure walls must be of sufficient strength and designed and supported so that when subjected to a pressure of 75 pounds applied horizontally at any point on the walls of the enclosure, the deflection will not reduce the running clearance to exceed one inch.

(4) The top of the car enclosure must be designed and installed so as to be capable of sustaining a load of 300 pounds on any square area 2 feet on a side and 100 pounds applied at any point. Simultaneous application of these loads is not required.

WAC 296-96-16130 What requirements apply to the construction of car frames and platforms?

(1) Every elevator suspended by wire ropes must have a car frame consisting of a crosshead, uprights (stiles), and a plank located approximately at the middle of the car platform and in no case farther from the middle than one-eighth of the distance from the front of the platform.

(2) Car frames must be guided on each guide rail by upper and lower guiding members attached to the frame.

(3) Car frames and outside members of the platform must be made of steel.

WAC 296-96-16140 How must car frames and platforms be connected?

Connections between members of the car frames and platform must be riveted, bolted, or welded and must meet the following specifications:

(1) Bolts where used through sloping flanges of structural members must have bolt heads of the tipped head type or must be fitted with beveled washers.

(2) Nuts used on sloping flanges of structural members must seat on beveled washers.

(3) Welding of parts upon which safe operation depends must be done in accordance with the appropriate standards established by the American Welding Society.

WAC 296-96-16150 What is the load capacity of a casket lift car?

(1) Driving machines, car and counterweight suspension mechanisms, and overhead beams and supports must be able to sustain a car with a structural load capacity based upon its inside net platform area as shown in American Standard Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks A17.1, Table 216.1.

(2) A metal plate which gives the rated load in letters and figures not less than 1/4 inch high stamped, etched or raised on the surface of the plate must be fastened in a conspicuous place in the car.

WAC 296-96-16160 What types of casket lift driving machines are allowed?

Only drum, traction or plunger type driving machines may be used.

WAC 296-96-16170 What material and grooving is required for sheaves and drums?

Material and grooving for sheaves and drums must be of metal finished grooves and have a pitch diameter not less than 40 times the diameter of the rope.

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WAC 296-96-16180 What types of brakes must be used on the driving machine?

Elevator driving machines 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.

WAC 296-96-16190 Where must terminal stopping devices be located?

(1) Upper and lower normal stopping devices must be provided at the top and bottom of the hoistway.

(2) Final terminal stopping devices must be provided and arranged to stop electric power to the elevator driving machine motor and brake after the car has passed a terminal landing but so that under normal operating conditions it will not function when the car is stopped by the normal terminal stopping device.

(3) Elevators having traction machines must have final terminal stopping switches located in the hoistway and operated by cams attached to the car.

(4) Elevators having winding-drum machines must have terminal stopping switches located on and operated by the driving machine, which must not be driven by chain, rope or belt. Also, stopping switches must be installed in the hoistway and operated by cams attached to the car or counterweights.

(5) All elevators having winding-drum machines must have a slack rope device with an electric switch of the enclosed manually reset type which will cause the electric power to be removed from the driving machine motor and brake if the hoisting ropes become slack.

WAC 296-96-16200 What are the specifications for casket lift ropes and rope connections?

(1) Elevator cars and counterweights must be suspended by steel wire ropes. Only iron (low carbon steel) or steel wire ropes with fibre cores, having the commercial classification of "elevator wire rope" may be used for the suspension of elevator cars and for the suspension of counterweights.

(2) The minimum number of hoisting ropes is:

(a) Three 1/2 inch ropes for traction elevators; and

(b) Two 1/2 inch ropes for drum type elevators.

(3) Fastenings must be by individual tapered babbitted rope sockets or by other department-approved types.

(4) The rope sockets must be of a type which will develop at least 80 percent of the braking strength of the strongest rope to be used in such fastenings, and U-bolt type rope clips (clamps) must not be used for load line fastenings.

WAC 296-96-16210 What specific requirements apply to hydraulic casket lifts?

(1) All hydraulic elevators must be a plunger type with the plunger securely attached to the car platform.

(2) Plungers composed of more than one section must have the joints designed and constructed to carry in tension the weight of all plunger sections below the joints.

(3) Plungers must be provided with solid metal stops to prevent the plunger from traveling 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 hydraulic system.

(4) Any leaking hydraulic oil must be collected.

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WAC 296-96-16220 What requirements apply to valves, supply piping, and fittings?

(1) Valves, piping and fittings must not be subjected to working pressures that exceed manufacturer recommendations.

(2) Pipes, especially those that may vibrate, must be sufficiently supported at each joint and fitting so undue stress is eliminated.

(3) A shut-off valve must be installed in the pit.

(4) Each pump must be equipped with a relief valve and all relief valves must be:

(a) Located between the pump and check value in a bypass connection;

(b) A type that cannot be shut off from the hydraulic system; and

(c) Pre-set to open at a pressure not greater than 125 percent of the working pressure at the pump.

EXCEPTION: Relief valves are not required for centrifugal pumps driven by an induction motor when the shutoff or maximum pressure that the pump develops is no more than 135 percent of the working pressure at the pump.

(5) A check valve must be installed that will hold a car and its rated load at any point whenever a pump stops or pump operating pressure drops below the required minimum.

WAC 296-96-16230 What type of stopping devices must be installed?

Normal stopping devices operated by cams attached to the car must be installed at the top and bottom of the hoistway. Final terminal stopping devices and anticreep leveling devices are not required.

WAC 296-96-16240 What type of operating devices must be used?

Only constant pressure or automatic type operating devices located outside the hoistway may be used.

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Boat Launching Elevators

WAC 296-96-18010 What are the definitions for boat launching elevators?

"Boat launching elevator" is a device that:

(1) Is equipped with a car or platform;

(2) Moves in guides in a substantially vertical direction;

(3) Serves to connect one or more floors or landings of a boat launching structure with a beach or water surface; and

(4) Is used for carrying or handling boats in which people ride.

"Boat launching structure" is any structure that houses and supports any boat launch elevator.

WAC 296-96-18011 What are the minimum maintenance requirements for boat launch elevators?

Owners of boat launch elevators are responsible for ensuring that:

(1) Elevators and their parts are maintained in a safe condition; and

(2) All devices and safeguards required by these regulations are maintained in good working order.

WAC 296-96-18020 Must boat launching elevator cars and platforms be enclosed?

All boat launching elevator cars or platforms must be enclosed to a height of at least 6 feet from the floor on all sides where there are no hoistway doors or gates. Enclosures may be built as solid panels or open work which will reject a two inch diameter ball.

WAC 296-96-18030 What electrical wiring requirements apply to boat launching elevators?

(1) All electric wiring used in boat launching elevators, except the traveling cable, must be enclosed in rigid metal conduit.

(2) The traveling cable, which is required between the car mounted terminal stopping switch and the hoistway, must be made of flexible, nonmetallic, moisture-retardant, flame-retardant material.

(3) All electrical outlets, switches, junction boxes and fittings used in boat launching elevators must be weather proof.

WAC 296-96-18040 What type of brakes must be used on boat launching elevators?

All electric boat launching elevators must be equipped with effective brakes that are applied by springs and released electrically. Brake capacity must be sufficient to hold the elevator and its rated load at rest.

WAC 296-96-18050 What types of stop switches and protective devices are required on boat launching elevators?

(1) All electric boat launching elevators must be equipped with:

(a) A bottom terminal stop switch operated by the traveling cable and a float or some other department approved mechanism;

(b) A top terminal stop switch that is located in the hoistway and is operated either by a cam attached to the car or some other department approved mechanism; and

(c) Key-operated, continuous pressure type operating switches that are located outside the hoistway but within sight of the elevator car or platform.

(2) All boat launching elevators operated by a winding drum, must be equipped with a final stop switch that is located on and operated directly by the driving machine. Chains, ropes or belts must not drive final stop switches.

(3) All boat launching elevators driven by a polyphase alternating current motor must be equipped with the following approved relays:

(a) A reverse phase relay that prevents the driving machine motor from starting when either the phase rotation is in the wrong direction or there is a phase failure; and

(b) A main line relay or contact that automatically stops power to the driving machine motor and brake, activating the brake when any safety device is activated.

(4) Hand rope controls must not be used on any boat launch elevator.

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WAC 296-96-18060 When must hoisting cables be reshackled or refastened?

The load end of a hoisting cable on all boat launching elevators must be reshackled or refastened every 12 months.

WAC 296-96-18070 What requirements apply to hoistway gates and doors?

(1) All boat launching elevators must have gate-protected hoistway entrances at every landing except those landings located on the beach or at the water surface.

(2) All gates must comply with the following minimum requirements:

(a) There must be a full-bodied, balanced type safety gate that protects the full width of the hoistway and must hang, at all points along the gate, within two inches of the landing threshold;

(b) The minimum gate height on top landings is 42 inches and 66 inches on all intermediate landings;

(c) Gates must be constructed of either metal or wood;

(d) Gates must be capable of withstanding a lateral pressure, applied at any point, of 250 pounds without breaking, becoming permanently deformed or being displaced from their guides or tracks;

(e) The openings in grille, lattice or other openwork designed gate bodies, must reject a two-inch diameter ball; and

(f) Gates must be equipped with a department approved combination electric contact and mechanical lock.

WAC 296-96-18080 Must boat launching elevator hoistways be enclosed?

The sides of elevator hoistways adjacent to a dock area platform, walkway or ramp must be enclosed. The enclosures must comply with the hoistway safety gate dimension and pressure requirements in WAC 296-96-18070.

Mechanized Parking Garage Equipment

WAC 296-96-20005 What national safety codes has the department adopted for mechanized parking garage equipment?

The department has adopted USASI Standard A113.1-1964 "Safety Code for Mechanized Parking Garage Equipment."

WAC 296-96-20010 What are the minimum maintenance requirements for mechanized parking garage equipment?

Owners of mechanized parking garage equipment are responsible for ensuring that:

(1) Elevators and parts are maintained in a safe condition; and

(2) All devices and safeguards required by these regulations are maintained in good working order.

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

Regulations for Existing Electric Elevators, Direct Plunger and Roped Hydraulic Elevators, Escalators used to transport

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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?

Yes.

(1) The keys to the machine room and the keys that are necessary to operate the elevator must be located in a locked key retainer box in the elevator lobby; or located by machine room doors at no more than six feet above the floor, provided access to the key box doesn't require passage through locked doors. The key retainer box must be:

(a) Readily accessible to authorized personnel;

(b) Clearly labeled "Elevator"; and

(c) Equipped with a 1-inch cylinder cam lock key #39504.

Further: Keys for access to elevator machine rooms and for operating elevator equipment must be tagged and kept in the key box. The key box must contain all keys necessary for inspections of the elevator.

Mechanical hoistway access devices must be kept in the key box or machine room.

(2) The department may approve existing retainer boxes provided they are:

(a) Readily accessible to authorized personnel;

(b) Clearly labeled "Elevator"; and

(c) The lock must be either a 1-inch cylinder cam lock key #39504 or a combination lock. The combination for the lock must be on record with the department.

Deviations from this section due to security concerns must be approved by the department via a variance request.

Note: The cities of Seattle and Spokane may designate their own options for keys and lock box arrangement via their rule processes.

(3) ASME A17.1-2.27.8 Local fire or building code authorities may specify the requirements for a uniform keyed lock box and its location to contain the necessary keys (this will be in addition to the requirements listed in subsection (1) or (2) of this section). Where required, a lock box, including its lock and other components, shall conform to the requirements of UL 1037 (see Part 9). These keys shall be kept on the premises in a location readily accessible to firefighters and emergency personnel, but not where they are available to the public.

(4) ASME A17.1 Part 8 contains general requirements for new and existing equipment. Except reference ASME A17.1-2.27.8 shall not apply to phase one and two key switches installation on existing elevators installed prior to the adoption of this code unless required by the local code official.

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.

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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.

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.

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."

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.

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WAC 296-96-23115 What safety requirements apply to inspecting and maintaining overhead sheaves?

(1) Overhead sheave spaces requiring inspection and maintenance must be located so adequate access and decking is available to insure the safety of inspection and maintenance personnel.

(2) Guardrails must be installed where decking does not cover the complete hoistway.

(3) Guardrail and deck supports must be similar to those required for the top of an elevator car and may be made of either wood or metal compatible with the existing hoistway construction.

(4) Inspections and maintenance may be performed from the top of an elevator car if a ladder is not required to perform these functions.

WAC 296-96-23116 What requirements apply to car numbers?

In any building with more than one elevator, numbers at least two inches in height identifying each car must be located at the main lobby entrance, inside the car, on the machine, and on the disconnect switch and if the conveyance has a walk-in pit, the buffer stands.

WAC 296-96-23117 What requirements apply to top of car railings for traction elevators?

A standard railing must be installed on the top of all traction elevators where the perpendicular distance between the edges of the car top and the adjacent hoistway enclosure exceeds twelve inches horizontal clearance. The railing shall be substantially constructed of metal and shall consist of a top rail, intermediate rail and post. The top rail shall have a smooth surface and the upper surface shall be located at a vertical height of forty-two inches. The intermediate rail shall be located approximately halfway between the top rail and the car top. There must be a minimum of six inches of clearance above the top rail when the car is at its furthest point of travel.If the vertical clearance from the car top to the hoistway enclosure, including gravity-stopping distance, is less than 48 inches away, the top handrail height may be reduced to 42 inches plus or minus 3 inches. If the clearances will not allow a 39-inch handrail, do not install the top of car railing, instead provide signage required by WAC 296-96-23119.

WAC 296-96-23118 What requirements apply to top of car railings for hydraulic elevators in unenclosed hoistways?

A standard railing must be installed on the top of hydraulic elevators installed in unenclosed hoistways. The railing shall be substantially constructed of metal and shall consist of a top rail, intermediate rail and post. The top rail shall have a smooth surface and, the upper surface shall be located at a vertical height of 42 inches plus or minus 3 inches. The intermediate rail shall be located approximately halfway between the top rail and the car top. There must be a minimum of six inches of clearance above the top rail when the car is at its furthest point of travel on the mechanical stop. If the vertical clearance of 6 inches cannot be achieved, do not install car top railing, instead provide signage required by WAC 296-96-119 [WAC 296-96-23119].

WAC 296-96-23119 What signage requirements apply to traction elevators with minimal overhead clearance?

Elevators that do not have a minimum of twenty-four inches of clearance from the crosshead, or any equipment mounted on the crosshead, to the lowest member of the overhead structure in the hoistway when the car has reached its

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maximum upward movement must have signage. A sign must be located near the top of car inspection station. An additional sign must be posted on the hoistway wall. This sign must be visible when accessing the car top. The sign shall consist of alternating four-inch diagonal red and white stripes and must clearly state "danger low clearance" in lettering not less than four inches in height.

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.

WAC 296-96-23122 What type of lighting must be installed in machine rooms and machinery space?

Permanent electric lighting must be provided in all machine rooms and machinery spaces. All installations prior to 7/1/2004 require illumination to be at least 10 foot-candles at floor level.

WAC 296-96-23123 What type of service outlets must be installed in elevator cars, hoistways and machinery spaces?

Service outlets, where provided, must be permanently grounded.

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.

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

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

WAC 296-96-23126 What protective measures should be taken in hoistways, machine rooms and machinery spaces to insure safety?

(1) Gears, sprockets, sheaves, cables, tapes, belts and chains must be fitted with suitable guards to prevent accidental contact, where feasible.

(2) Openings in machine room floors above the hoistway must be guarded to prevent tools from falling into the hoistway below.

(3) Ventilation grids where exposed to the hoistway below must be firmly bolted or secured to prevent accidental removal and must be fitted with 1/2 inch wire mesh under the grid.

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Section 3 - Pits

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.

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.

WAC 296-96-23132 What lighting requirements apply to pits?

(1) Installations prior to 7/1/2004 require a permanent lighting fixture producing at least 5 foot-candle at the pit floor must be installed in all pits.

(2) A light switch must be installed and must be accessible from the pit access door.

(3) A permanent grounded outlet must be provided in all pits.

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.

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.

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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-resistive 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.

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.

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.

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(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.

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.

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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.

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.

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.

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.

WAC 296-96-23158 What requirements apply to elevator floor numbers?

Elevator hoistways must have floor numbers at least 4 inches high and placed on the walls and/or doors of hoistways at intervals so that a person in a stalled elevator, upon opening the car door 4 inches, could determine the floor position.

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.

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(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.

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.

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

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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 can 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.

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.

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.

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(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.

SUBPART II - MACHINERY AND EQUIPMENT FOR ELECTRIC ELEVATORS

WAC 296-96-23200 What is the scope of Subpart II?

Subpart II, Machinery and Equipment for Electric Elevators, is a minimum standard for all existing electric elevators. It applies to other equipment only as referenced in the applicable Subpart.

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.

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.

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 platform 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.

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.

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(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.

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.

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.

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.

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.

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(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 of 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).*

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.

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(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.

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 multisection 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.

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(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.

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.

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.

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.

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(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.

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.

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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.

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 be to 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.

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.

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.

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(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.

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 squared + 66.7A.

(2) For an elevator with an inside net platform area of more than 50 feet squared, W = 0.0467A 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^2	Rated Load, lb.	Inside Net Platform Area, ft^2
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

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MAXIMUM* INSIDE NET PLATFORM AREAS FOR THE VARIOUS RATED LOADS			
Rated Load, lb.	Inside Net Platform Area, ft^2	Rated Load, lb.	Inside Net Platform Area, ft^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.			

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.

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;

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(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 on 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.

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.

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."

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.

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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.

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.

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.

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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.

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.

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.

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.

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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.

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.

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.

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 rest 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 connection 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;

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(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 lowing 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.

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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.

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.

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.

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.

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.

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.

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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.

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.

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.

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 times N 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.

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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
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

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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.

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.

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.

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.

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.

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.

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.

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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.

WAC 296-96-23303 What requirements apply to hydraulic elevators without safety bulkheads?

(1) Oil levels must be monitored and tracked in a log.

(2) The log must contain the date the oil was added, the reason for the loss of oil, and the amount of oil added.

(3) If the reason for the loss of oil cannot be determined, the unit must be immediately taken out of service and the cylinder must be replaced.

Note: This section becomes effective August 20, 2004.

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.

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.

WAC 296-96-23309 What requirements apply to car enclosures?

Car enclosures must conform to the requirements of WAC 296-96-23215.

WAC 296-96-23311 What requirements apply to capacity and loading?

Capacity and loading must conform to the requirements of WAC 296-96-23240.

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.

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 traveling 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

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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.

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.

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.

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.

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.

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.

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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.

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.

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.

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.

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.

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(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.

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.

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.

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.

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.

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.

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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.

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.

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.

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.*

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.

WAC 296-96-23412 What requirements apply to anti-slide devices?

On high deck balustrades, antislide devices 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.

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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.

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.

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.

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.

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.

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.

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.

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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.

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."

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.)

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 automatic chain tension is provided, if excessive sag occurs in either step chain.

WAC 296-96-23436 What requirements apply to brake applications?

The brake must automatically stop the escalator when any of the safety devices function.

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.

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 combplate.

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.

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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.

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.

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.

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.

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.

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.

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 lb of effort is required to open the access plate.

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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.

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.

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 "Danger—Dumbwaiter—Keep closed."

SUBPART VI - ALTERATIONS, REPAIRS, MAINTENANCE, AND TESTING

WAC 296-96-23600 What is the scope of Part VI, Alterations, Repairs and Maintenance?

Subpart VI, Alterations, Repairs and Maintenance, applies to periodic inspections, tests, alterations, *preventive* maintenance, *and routine examinations*. The applicable code references are: ASME A17.1-Part 8, ASME A18.1-Part 10, ASME A90.1-Part 8, and appendix 2, ANSI A10.4-Part 26 & 27, ANSI A10.5-Part 4, and other requirements in this chapter.

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WAC 296-96-23601 ASME A17.1-8.6.1.2.1 General maintenance requirements for conveyances regulated by ASME A17.1 Part 8.

(1) ASME A17.1-8.6.1.2.1(4) All persons authorized per chapter 70.87 RCW and this chapter to perform maintenance shall have detailed, code required written procedures including, but not limited to, check out, inspection, testing, maintenance, and examination, which shall be in the mechanic's possession and available upon request to the department's personnel.

(2) ASME A17.1-8.6.1.2.1 (4)(c) The maintenance records required by ASME A17.1-8.6.1.4 shall be kept at a central location either in the machine/control room, space or within the building where the conveyance exists. Other on-site locations as permitted by the department.

(3) ASME A17.1-8.6.1.2.1(d) The Maintenance Control program shall be accessible to the elevator owner, the owner's representative, inspector, and elevator service personnel and document compliance with 8.6, applicable sections of 8.11, and this chapter.

(4) Devices that remotely interact with conveyances covered by this chapter can create a hazard when used to effect a change in its controls. Therefore, any conveyance found operating with a device that can directly effect a change in its controls from a remote location is prohibited unless it is operated under the direct on-site supervision of a person who meets the definition of "licensed elevator mechanic."

Note: *Remote operation controls, operated by building personnel located within the building, may be installed for security purposes upon approval of installation or alteration permit.*
Table N-2, monitoring is for information only and shall not be a substitute for on-site inspections or examinations.

WAC 296-96-23602 ASME A17.1-8.6.1.4 Maintenance records.

(1) ASME A17.1-8.6.1.4.1 Maintenance records shall document compliance with ASME A17.1-8.6 and the applicable parts of ASME A17.1-8.11 (see WAC 296-96-23605) and include records on the activities listed in ASME A17.1-8.6.1.4.1 (a) through (e). In addition, all maintenance, examinations, and safety tests shall be documented with interval(s). Each task shall be defined by code reference number and month(s) the task is to be performed. A signature by the authorized mechanic shall demonstrate each completed task (initials are acceptable with a legible signature page). The layout for the records shall be similar to the sample supplied by the department on the elevator program web site.

(2) ASME A17.1-8.6.1.4.2 Record availability:

(a) Records shall be available in hard copy, maintained, and kept current, upon completion of the task(s);

(b) The maintenance records shall be in the machine room or other on-site location and immediately available to the elevator owner(s) and representative and conspicuously posted for the inspector and elevator personnel;

(c) Retention shall be for a period of six years; and

(d) The records must be available for an additional year for each category five test extended beyond twelve months.

(3) The owner or representative is responsible for installing and maintaining updated records in the machine room. The outdated log and records shall remain conspicuously posted in the machine room per the schedule in subsection (2) of this section. The records are the property of the owner and shall be made available to all elevator personnel.

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WAC 296-96-23603 ASME A17.1-8.6.1.6.3(a) Wiring diagrams.

Up-to-date wiring diagrams detailing all circuits including, but not limited to, electrical protective devices (see ASME A17.1-2.26.2) and critical operating circuits (see ASME A17.1-2.26.3) shall be available in the machinery space, machine room, control space, or control room as appropriate to the installation. Wiring diagrams shall not be removed from the machinery space, machine room, control space, or control room.

WAC 296-96-23604 ASME A17.1-8.6.1.7 Periodic tests.

(1) The frequency of periodic tests shall be established by the department as required by ASME A17.1-8.11.1.3.

(a) Category one tests shall be performed twelve months from the previous category one tests.

(b) Category three tests shall be performed thirty-six months from the previous category three tests.

(c) Category five tests shall be performed sixty months from the previous category five tests.

(2) The tests shall be performed no later than thirty days past their due date. The owner or agent must seek written permission from the department to deviate from the schedule.

A civil penalty of five hundred dollars per month may be applied for noncompliance.

(3) ASME A17.1-8.6.1.7 The authority having jurisdiction may require that periodic tests or examination(s) be witnessed by an inspector employed by the authority having jurisdiction.

(4) Tag placement and use shall be in accordance with ASME A17.1-8.6.1.7.2 periodic test tags and the retention shall be equivalent to the maintenance control program records.

WAC 296-96-23605 ASME A17.1-8.6.4 Maintenance, examination and testing of elevators.

(1) The maintenance, examination, and testing of electric elevators shall conform to ASME A17.1-8.6.1 through 8.6.4 and the applicable sections of 8.11.2 as amended below.

(a) ASME A17.1-8.11.2.1 Periodic examination requirements for electrical elevators. Service providers shall include the following when identifying components or systems, or both, that shall be examined if installed.

(b) ASME A17.1-8.11.2.1.1 Inside car:

(i) Door reopening device;
(ii) Stop switches;
(iii) Operating control devices;*
*(iv) Car floor and landing sill**;*
*(v) Car lighting**;*
(vi) Car emergency signal;
(vii) Car door or gate;
(viii) Door closing force;
(ix) Power closing of doors or gates;
(x) Power opening of doors or gates;
(xi) Car enclosure;*
(xii) Emergency exit;
(xiii) Ventilation;*
(xiv) Rated load, platform area, and data plate;*
(xv) Restricted opening of car or hoistway doors;
(xvi) Car ride;*
(xvii) Door monitoring systems; and
(xviii) Stopping accuracy.*

(c) ASME A17.1-8.11.2.1.2 Machine room/control room:

(i) Equipment exposure to weather;
*(ii) Means of access**;*
(xvii) Drive machine brake;
(xviii) Traction drive machines;

*(iii) Headroom**;*
(iv) Means necessary for tests;
(v) Inspection and test panel;
*(vi) Lighting and receptacles**;*
*(vii) Enclosure of machine room/control room**;*
(viii) Ventilation;
*(ix) Pipes, wiring, and ducts**;*
(x) Guarding of equipment;
(xi) Numbering of elevators, machines, and disconnect switches;
*(xii) Maintenance path and maintenance clearance**;*
(xiii) Stop switch;
(xiv) Disconnecting means and control;
(xv) Controller wiring, fuses, grounding, etc.;
(xvi) Machinery supports and fastenings;
(xix) Gears, bearings, and flexible connections;
(xx) Winding drum machine;
(xxi) Belt or chain-drive machine;
(xxii) Absorption of regenerated power;
(xxiii) Traction sheaves;
(xxiv) Secondary and deflector sheaves;
(xxv) Rope fastenings;
(xxvi) Operating devices;
*(xxvii) Code data plate**;*
(xxviii) AC drives from a DC source;
(xxix) Slack rope devices;
(xxx) Wiring diagrams;
(xxxi) Rope retainers or restraints for seismic risk zones; and
(xxxii) Seismic and displacement switches.

(d) ASME A17.1-8.11.2.1.3 Top-of-car:

(i) Top-of-car stop switch;
(ii) Car top light and outlet;
(iii) Top-of-car operating device working platforms;
*(iv) Top-of-car clearance and refuge space**;*
(v) Top counterweight clearance;
(vi) Car, overhead, and deflector sheaves;
*(vii) Crosshead data plate**;*
(viii) Top emergency exit;
*(ix) Floor and emergency identification numbering**;*
*(x) Hoistway construction**;*
*(xi) Hoistway smoke control**;*
*(xii) Pipes, wiring, and ducts**;*
*(xiii) Windows, projections, recesses, and setbacks**;*
(xiv) Hoistway clearance;
*(xv) Multiple hoistways**;*
(xvi) Traveling cables and junction boxes;
(xvii) Door and gate equipment;
(xviii) Car frame and stiles;
(xix) Guide rails fastening and equipment;
(xx) Governor rope;

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(xxi) Governor releasing carrier;

(xxii) Fastening and hitch plate;

(xxiii) Suspension means;

(xxiv) Compensation means;

(xxv) Machinery space/control space;

(xxvi) Working areas on the car top;

(A) Means to prevent unexpected movement.

(B) Unexpected car movement device.

(C) Operating instructions for unexpected car movement device.

(D) Operating instructions for egress and reentry procedure;

(xxvii) Equipment exposure to weather;

(xxviii) Machinery supports and fastenings;

(xxix) Guarding of exposed auxiliary equipment;

(xxx) Anchoring of beams and supports in seismic risk zone 2 or greater;

(xxxi) Rope retainers and snag guards in seismic risk zone 2 or greater;

(xxxii) Position restraints in seismic risk zone 2 or greater;

(xxxiii) Car and counterweight guide rails system in seismic risk zone 2 or greater;

(xxxiv) For seismic risk zones 2 or greater, horizontal clearance for car and counterweight, snag-point clearance and rail fastening;

(xxxv) Seismic risk zone 2 or greater rope retainers/restraints and snag guards;

(xxxvi) Seismic risk zone 2 or greater rope retainer and snag guard for compensating ropes or chains and compensating tension sheave fastening; and

(xxxvii) Sheaves with nonmetallic groove surfaces.

(e) ASME A17.1-8.11.2.1.4 Outside hoistway:

(i) Car platform guard;

(ii) Hoistway doors;

(iii) Vision panels;*

(iv) Hoistway door locking devices;

(v) Access to hoistway;

(vi) Sequence operation;

(vii) Hoistway enclosure;

(viii) Elevator parking devices;

(ix) Emergency and access hoistway openings;

(x) Separate counterweight hoistway;

(xi) Means necessary for tests;

(xii) Inspection and test panel (ASME A17.1-2.7.6.5), inspection operation (ASME A17.1-2.26.1.4.1), and inspection operation with open door circuits; and

(xiii) Equipment exposure to weather.

(f) ASME A17.1-8.11.2.1.5 Pit:

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(i) Pit access, lighting, stop switch and condition;
(ii) Bottom clearance and runby;
(iii) Traveling cables;
(iv) Compensating chains, ropes, and sheaves;
(v) Car frame and platform;
(vi) Machinery space/control space;
(vii) Working areas in the pit;
(viii) Equipment exposure to weather;
(ix) Machinery supports and fastenings;
(x) Guarding of exposed auxiliary equipment;
(x) Guarding of exposed auxiliary equipment;
(xi) Pit inspection operation.

(A) Means to prevent unexpected movement.
(B) Unexpected car movement device.
(C) Operating instructions for unexpected car movement device.
(D) Operating instructions for egress and reentry procedure;

(g) ASME A17.1-8.11.2.1.7 Working platform:

(i) Working platforms; operating instructions;
(ii) Retractable stops; retractable stop electrical device; and
(iii) Inspection operation.

Note: *(*) May be combined with other items on the log.*
(**) A visual component that must be reported to the owner.

(2) The maintenance, examination, and testing of hydraulic elevators shall conform to ASME A17.1-8.6.1 through ASME A17.1-8.6.3 and the applicable requirements of ASME A17.1-8.6.4, ASME A17.1-8.6.5, and ASME A17.1-8.11.3, as amended below.

(a) Periodic examination requirements for hydraulic elevators. Service providers shall include the following when identifying components or systems, or both, that shall be examined if installed.

(b) ASME A17.1-8.11.3.1.1 Inside the car:

(i) Door reopening device;
(ii) Stop switches;
(iii) Operating control devices;*
*(iv) Sill and car floor**;*
*(v) Car lighting and receptacles**;*
(vi) Car emergency signal;
(vii) Car door or gate;
(viii) Door closing force;
(ix) Power closing of doors or gates;
(x) Power opening of doors or gates; car enclosure;*
(xi) Emergency exit;
(xii) Ventilation;*
(xiii) Signs and operating device symbols;
(xiv) Rated load, platform area, and data plate;
(xv) Restricted opening of car or hoistway doors;
(xvi) Car ride;*
(xvii) Door monitoring system; and
(xviii) Stopping accuracy.*

(c) ASME A17.1-8.11.3.1.2 Machine room/control room:

(i) Equipment exposure to weather;
*(ii) Means of access**;*
*(iii) Headroom**;*
(iv) Means necessary for tests;
(x) Numbering of elevators, machines, and disconnect switches;
*(xi) Maintenance path and maintenance clearance**;*
(xii) Stop switch;
(xiii) Disconnecting means and control;

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(v) Inspection and test panel;
*(vi) Lighting and receptacles**;*
*(vii) Enclosure of machine room/spaces and control room/spaces**;*
(viii) Ventilation and heating;
*(ix) Pipes, wiring, and ducts**; guarding of equipment;*
(xiv) Controller wiring, fuses, grounding, etc.;
(xv) Hydraulic power unit;
*(xvi) Tanks**;*
(xvii) Recycling operation; and
(xviii) Wiring diagrams.

(d) ASME A17.1-8.11.2.1.3 Top of car:

(i) Top-of-car stop switch;
(ii) Car top light and outlet;
(iii) Top-of-car operating device and working platforms;
*(iv) Top-of-car clearance and refuge space**;*
(v) Top emergency exit;
*(vi) Floor and emergency identification numbering**;*
(vii) Hoistway construction;*
*(viii) Hoistway smoke control**;*
*(ix) Pipes, wiring, and ducts**;*
*(x) Windows, projections, recesses, and setback**;*
*(xi) Hoistway clearances**;*
*(xii) Multiple hoistways**;*
(xiii) Traveling cables and junction boxes;
(xiv) Door and gate equipment;
(xv) Car frame and stiles;
(xvi) Guide rails fastening and equipment;
(xvii) Governor rope;
(xviii) Wire rope fastening and hitch plate;
(xix) Suspension rope;
(xx) Slack rope device;
(xxi) Traveling sheave;
*(xxii) Crosshead data plate**;*
(xxiii) Equipment exposure to weather;
(xxiv) Machinery supports and fastenings; and
(xxv) Guarding of equipment.

(e) ASME A17.1-8.11.3.1.4 Outside hoistway:

(i) Car platform guard;
(ii) Hoistway doors;
(iii) Vision panels;*
(iv) Hoistway door locking devices;
(v) Access to hoistway;
(vi) Power closing of hoistway doors;
(vii) Sequence operation;
(viii) Hoistway enclosure;*
(ix) Elevator parking devices;
(x) Emergency doors in blind hoistways;
(xi) Inspection and test panel (ASME A17.1-3.7.1 and ASME A17.1-2.7.6.5), inspection operation (ASME A17.1-2.26.1.4.1), and inspection operation with open door circuits (ASME A17.1-2.26.1.5); and
(xii) Equipment exposure to weather.

(f) ASME A17.1-8.11.3.1.5 Pit:

(i) Pit access, lighting, stop switch, and condition;
*(ii) Bottom clearance, runby, and minimum refuge space**;*
(iii) Plunger and cylinder;
(iv) Traveling cables
(v) Car frame and platform;
(vii) Governor rope tension device;
(viii) Equipment exposure to weather;
(ix) Machinery supports and fastenings;
(x) Guarding of exposed auxiliary equipment;
(xi) Pit inspection operation; and

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(vi) Supply piping;

(xii) Seismic overspeed valve & pipe support

Note: *(*) May be combined with other items on the log.*
(**) A visual component that must be report to the owner.

(g) If it is determined the hydraulic cylinders system is not being maintained per ASME A17.1-8.6.5.7 and ASME A17.1-8.6.5.14, cylinders installed below ground shall conform to ASME A17.1-3.18.3.4 or to ASME A17.1-8.6.5.8(a) or ASME A17.1-8.6.5.8(b).

(h) The relief-valve adjustment shall be examined to ensure that the seal is intact. If the relief-valve seal is not intact, checks shall be conducted in accordance with ASME A17.1-8.6.5.14.1 and the state hydraulic overpressure form shall be used to document compliance. The form shall be left on-site and located in the machine room in a conspicuous location.

(3) The maintenance and examination of dumbwaiter, rack-and-pinion, screw-column, hand, incline, limited use limited application, private residence, power sidewalk, rooftop, special purpose, and shipboard and construction elevators shall conform to ASME A17.1-8.6.1 through ASME A17.1-8.6.3 and the applicable requirements of ASME A17.1-8.6 and ASME A17.1-8.11 as amended in this chapter.*

Note: *(*) Chapter 70.87 RCW exempts private resident elevators from periodic inspections, but these maintenance guidelines provide the proper outline for the level of service that should be provided.*

(4) The maintenance of material lifts without automatic transfer devices, hand pull and electric manlift, residential incline elevators shall conform to ASME A17.1-8.6.1 through ASME A17.1-8.6.3 and the applicable requirements of ASME A17.1-8.6 and ASME A17.1-8.11, as amended in this chapter.*

Maintenance, examination and test requirements shall only apply to the corresponding installation requirements in chapter 296-96 WAC.

Note: *(*) Chapter 70.87 RCW exempts private resident elevators from periodic inspections, but these maintenance guidelines provide the proper outline for the level of service that should be provided.*

(5) Periodic examination requirements for conveyances outlined in WAC 296-96-23605 (3) and (4). Service providers shall include the following when identifying components or systems, or both, that shall be examined if installed.

(a) ASME A17.1-8.11.5.1 Sidewalk elevator, WAC 296-96-23605 (1) or (2).

(b) ASME A17.1-8.11.5.2 Private resident elevators, WAC 296-96-23605 (1) or (2).*

(c) ASME A17.1-8.11.5.3 Hand elevators, WAC 296-96-23605(1).

(d) ASME A17.1-8.11.5.4 Dumbwaiters, WAC 296-96-23605 (1) or (2).

(e) ASME A17.1-8.11.5.5 Material lifts and dumbwaiters with automatic transfer devices, WAC 296-96-23605 (1) or (2).

(f) ASME A17.1-8.11.5.6 Special purpose personnel elevators, WAC 296-96-23605 (1) or (2).

(g) ASME A17.1-8.11.5.7 Inclined elevators, WAC 296-96-23605 (1)(a) through (2) or (3).

(h) ASME A17.1-8.11.5.8 Shipboard elevators, WAC 296-96-23605 (1) or (2).

(i) ASME A17.1-8.11.5.9 Screw-column elevators, WAC 296-96-23605 (1) or (2).

(j) ASME A17.1-8.11.5.10 Rooftop elevators, WAC 296-96-23605 (1) or (2).

(k) ASME A17.1-8.11.5.11 Rack-and-pinion elevators, WAC 296-96-23605 (1) and (2).

(l) ASME A17.1-8.11.5.12 Limited-use/limited-application elevators, WAC 296-96-23605 (1) or (2).

(m) ASME A17.1-8.11.5.13 Elevators used for construction, WAC 296-96-23605 (1) or (2).

(n) These conveyances shall be subject to the corresponding ASME A17.1-8.11 examination requirements as applicable (see ASME A17.1 for sections references). The applicable items above shall be documented on the required records.

Note: *Chapter 70.87 RCW exempts these elevators from periodic inspections, but these examination guidelines provide the proper outline for the level of service that should be provided.*

(6) The maintenance and examination of escalators shall conform to ASME A17.1-8.6.1 through ASME A17.1-8.6.3 and ASME A17.1-8.6.8 and the applicable sections of ASME A17.1-8.11.4. The maintenance and examination of moving walks shall conform to ASME A17.1-8.6.1 through ASME A17.1-8.6.3, ASME A17.1-8.6.9 and the applicable sections of ASME A17.1-8.11.4, as amended below.

(a) Periodic examination requirements for escalators and moving walks: Service providers shall include the following when identifying components or systems, or both, that shall be examined if installed.

(b) ASME A17.1-8.11.4.1 Escalators and moving walks:

(i) General fire protection;
(ii) Geometry;
(iii) Entrance and egress;
(iv) Lighting;
(v) Caution signs;
(vi) Combplate;
(vii) Deck barricade guard and antislide devices;*
(viii) Steps and treadway;
(ix) Operating devices;
(x) Skirt obstruction devices;
(xi) Handrail entry device;
(xii) Egress restriction device;
(xiii) Balustrades;
(xiv) Ceiling intersection guards;*
(xv) Skirt panels;
(xvi) Outdoor protection;*
(xvii) Additional stop switch(es);
(xviii) Controller and wiring; and
*(xix) Code data plate**, other: Annual clean down WAC 296-96-23610(7).*

Note: *(*) May be combined with other items on the log.*
(**) A visual component that must be reported to the owner.

WAC 296-96-23606 ASME A17.1-8.11 Covers periodic inspections, examinations, and tests of existing ASME A17.1 installations.

(1) ASME A17.1-8.11.1.1.1:

(a) Annual inspections shall be made by an inspector employed by the department having jurisdiction;

(b) The inspector shall submit a signed written report to the department containing the following information:

(i) Date of inspection; and

(ii) Code deficiencies noted during the inspection and a statement as to the corrective action to be taken, if any.

(2) Periodic or routine examinations shall be made by a person authorized by the department.

(a) Persons authorized are licensed mechanics and other authorized persons under RCW 70.87.270.

(b) The authorized mechanic shall submit a signature on the maintenance control record containing the following information:

(i) Date of examination(s);

(ii) ASME A17.1-8.11 components or systems that have been examined and performed according to this chapter;

(iii) Code deficiencies noted during the examination and a statement on the repair or replacement log as to corrective action taken, if any.

(3) ASME A17.1-8.11.1.4 Installation placed out-of-service.

(a) Maintenance, examinations, and safety tests shall not be required when an installation is placed "in red tag status." All code required maintenance, examinations, and safety tests must be up to date, prior to removal of the red tag.

(b) A conveyance in red tag status for two years or more shall be subject to witnessing by the inspector for the category tests due and may include ASME A17.1-8.11 items, before being placed back in service.

(c) Annual operating certificate, maintenance, examinations, inspections, and tests shall not be required when an installation is placed in "decommissioned status."

WAC 296-96-23610 What requirements *apply* to routine examinations and periodic or category 01, 03, and 05 safety tests?

The owner must ensure that her/his conveyances are *routinely examined* and *annually safety* tested by a person qualified to perform such services. All conveyances must be tested to the applicable code(s) by an elevator mechanic licensed in the appropriate category for the conveyance being tested.

(1) ASME A17.1-8.11.1.1.1 and ASME A17.1-8.11.1.1.2 Periodic and routine examinations and tests.

(a) Periodic tests as required in ASME A17.1-8.6 may be witnessed by an inspector employed by the authority having jurisdiction. The department authorizes mechanics licensed under this chapter to perform examinations and testing.

(b) For category 1 and 3 tests the authorized mechanic shall perform and submit a signed written report on the maintenance control log containing the code referenced devices tested and found compliant containing, but not limited to, the following information:

(i) Date of inspection;

(ii) Type of test(s) performed;

(iii) Detailed results of the test(s) including, but not limited to: Speed, governor trip speed, safety slide distance, relief valve setting, escalator/moving walk brake torque setting, etc.;

(iv) Code deficiencies noted during the test; and

(v) Statement as to any corrective action taken.

(c) For the category 5 test, the authorized mechanic shall complete a signed written report provided by the department containing, but not limited to, the information in (b)(i) through (v) and leave the report in a conspicuous location with the MCP logs.

The authorized mechanic shall sign on the space provided on the maintenance control log the code referenced devices tested and found compliant with the information addressed in (b)(i) through (v).

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(2) ASME A17.1-8.11.1.3 Periodic and routine examination frequency. The frequency of periodic examinations shall be established by the authority having jurisdiction. Intervals for periodic and routine examinations in ASME A17.1-8.11:

(a) A minimum of once per year and more often as age, usage, environmental condition, and design quality dictate; and

(b) A conveyance periodic examination is considered out of compliance if more than thirty days past the interval. Inspectors will make a report to owners of noncompliance.

(3) Required for firefighters' service portion of the log. It is the owner's responsibility to test firefighters' service operation of Phase I and Phase II key switches quarterly and annually perform the smoke detector test.

Note: The fire service key switch(es) and smoke detector testing may be performed and logged by the building owner.

(4) For five-year *and category 5* testing:

(a) A full-load safety test must be performed with weights on all conveyances.

(b) For roped hydraulic elevators a static load test with the full load on the car must also be performed.

(c) For tests administered under this subsection: A safety tag with the date and company conducting the test must be permanently attached to the *controller*.

(i) For vertical platform lifts and stair chairs the tag must be located at the disconnecting means.

(ii) Separate safety tags must be used to distinguish the no-load annual safety test and the five-year full load test.

(5) Documentation must be *retained in the machine room for the inspectors review and supplied* on the *form approved by the department*.

(6) Qualified *personnel* will conduct the test. A qualified person is either:

(a) An elevator mechanic licensed in the appropriate category for the conveyance being tested;

(b) The representative of a firm that manufactured the particular conveyance, and who holds a current temporary mechanic's license in this state; or

(c) The representative of a firm that manufactured the particular conveyance who is working under the direct supervision of an elevator mechanic licensed in the appropriate category for the conveyance being tested.

(7) Escalators shall be tested according to *ASME A17.1 adopted and this chapter* and *completely* cleaned annually. Upon completion of this work, the appropriate form indicating that the work, *including the skirt step index graph, has been completed and is in compliance. The documents* must be *left with the maintenance logs for the department inspector's review*.

(8) All other conveyances requiring annual testing must have tags indicating the date and the name of the company and person who performed the test. When the required location for mounting the tag is not readily accessible, the tag may be mounted on the main line disconnect.

WAC 296-96-23620 What requirements apply to alterations, repairs and maintenance?

The owner or the owner's agent is responsible for the safe operation, proper maintenance, and alteration of his or her conveyance(s) and must comply with the present adopted ASME A17.1, Part 8.

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WAC 296-96-23621 ASME A17.1-8.7.1.7 Repairs and replacement.

Repairs and replacements shall conform to ASME A17.1-8.6.2 and ASME A17.1-8.6.3. Repairs and replacements carried out as part of an alteration shall conform to the applicable ASME A17.1 or other adopted standards and requirements of this chapter.

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.

SUBPART VII - LIFTS FOR PHYSICALLY HANDICAPPED

WAC 296-96-23700 What is the scope of Subpart VII, Lifts for Physically Handicapped?

The department's rules regulating lifting devices for physically handicapped people are described in this subpart.

WAC 296-96-23701 Periodic examinations and safety tests.

(1) For five year and category 5 testing, in accordance with WAC 296-96-23610(4), a full-load safety test must be performed with weights on all accessibility equipment.

(2) ASME A18.1-10.1.2 The owner must ensure that the accessibility lifts are routinely examined and tested according to section 10.2 and periodically tested to 10.3. All conveyances must be tested to the applicable code(s) by an elevator mechanic licensed in the appropriate category for the lift being tested. An inspector employed by the department may witness the examinations or test.

WAC 296-96-23710 What requirements apply to lifts for the physically handicapped?

On installations prior to 7/1/2004: Inclined and vertical chairlifts and inclined and vertical wheelchair lifts installed only for use by persons with disabilities in locations other than in or at a private residence must be equipped with a standard electric switch Chicago lock with key #2252. *Owners are responsible for properly securing their lift during hours of nonuse*.

EXCEPTION: See WAC 296-96-02370 for key alterations. *If code clearances meant for wing walls are installed, the #2252 key requirement is not in effect (see ASME A18.1).*

This requirement is in addition to ASME A18.1, and the current Washington state rules and regulations on barrier-free design located in ANSI A117.1 in effect via the State Building Code (IBC).

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.

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

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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.

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