



Elevator Safety Program
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Acceptance Inspection Checklist

Inclined Residential Elevator Checklist

Code References

- ASME A17.1, 2004 – Effective 4/1/2005
- Oregon Structural Specialty Code 2003 – Effective 10/1/2004
- Oregon Electrical Specialty Code 2005 – Effective 4/1/2005
- Oregon Plumbing Specialty Code – Effective 4/1/2005

Note: Potential code violations are not necessarily restricted to this checklist.

The comments used in this checklist give direction only and are not intended to circumvent actual code language. Please refer to the appropriate standard as necessary to clarify any code issues that may arise during this inspection.

The codes referenced in this checklist are applicable to the elevator installation as of the effective date of April 1, 2005. If the structural or electrical permit was issued prior to April 1, 2005, the previous edition of the elevator code may be used to resolve code conflicts providing a the issue date for the electrical or structure permit can be verified by the elevator inspector.

While the Elevator Safety Program does not directly regulate the building code, it is permissible to question code issues and request clarification or validation from the local building department. The elevator inspector cannot require any corrections unless supported by the local building department in such cases.

Indicate elevator type: Electric <input type="checkbox"/> Hydraulic <input type="checkbox"/>			
Site Name:			Code Date: ____/____/____
Contractor:			
Elevator ID: _____-_____			
1 st Inspection Date	2 nd Inspection Date	3 rd Inspection Date	4 th Inspection Date
____/____/____	____/____/____	____/____/____	____/____/____

Car and Counterweight Guide and Track Supports and Fastenings	5.4.11.1	1) Material. a) Guide rails, guide-rail brackets, splice plates, and their fastenings shall be of steel or other metals conforming to 5.3.1.15 and 5.4.11.	<input type="checkbox"/>
	5.4.11.2	2) Stresses of Deflections. a) The guide-rail brackets, their fastenings and supports, shall be capable of resisting the horizontal forces imposed by loading with a total deflection at the point of support not in excess of 3 mm (0.125 in.). b) The guide rails shall not deflect in any direction 6 mm (0.25 in.) measured at the midpoint between brackets.	<input type="checkbox"/>
	5.4.11.3	3) Overall Length of Guide Rails or Track. a) The top and bottom ends of each run of guide rail shall be so located in relation to the extreme positions of travel of the car and counterweight that the car and counterweight guiding members cannot travel beyond the ends of the guide rails.	<input type="checkbox"/>
	5.4.12	4) Track(s)/Guide(s) Supporting Structure a) All supporting structures shall meet the requirements of the building code.	<input type="checkbox"/>
Runway & Pit Construction	A17.1	COMMENTS	Passed
Counterweight Guiding and Construction	5.4.9.1	1) Guiding. a) Counterweights, where used, shall be in a guide or track.	N/A <input type="checkbox"/>
	5.4.9.2	2) Construction..... a) Counterweights shall not be of sufficient weight to cause undue slackening of any car suspension means during acceleration or retardation of the car. b) Weight sections, if used, shall be mounted in structural or formed metal frames so designed as to retain weights securely in place. c) Counterweights shall be permitted to be constructed of a single metal plate.	<input type="checkbox"/>
			<input type="checkbox"/>
Bumpers and Buffers	5.4.10.1	1) Solid Bumpers. a) For rated speeds not exceeding 0.25 m/s (50 ft/min), if spring- or equivalent type buffers are not used, solid bumpers shall be installed.	<input type="checkbox"/>
	5.4.10.2	2) Construction and Requirements for Solid Bumpers. a) Solid bumpers shall be made of wood or other suitable resilient material of sufficient strength to withstand, without failure, the impact of the car with rated load or the counterweight, descending at 125% of the rated speed. b) The material used shall be of a type that will resist deterioration or be so treated as to resist deterioration.	<input type="checkbox"/>
	5.4.10.3	3) Spring Buffers. a) For rated speeds exceeding 0.25 m/s (50 ft/min), buffers of the spring type shall be installed.	<input type="checkbox"/>
	5.4.10.4	4) Construction and Requirements for Spring Buffers. a) Spring buffers shall be constructed so as to have a minimum stroke of 19 mm (0.75 in.) and a maximum stroke of 38 mm (1.5 in.) and shall not be fully compressed when struck by the car with its rated load or counterweight traveling at 125% of the rated speed.	<input type="checkbox"/>

Runway & Pit Construction	A17.1	COMMENTS	Passed
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Suspension Means	5.4.8.1	<p>1) Types Permitted.</p> <p>a) Where the chassis is suspended from the driving machine by a wire rope or roller chain, a single suspension means shall be permitted to be used.</p> <p>b) The suspension means shall be any one of the following:</p> <p>i) steel elevator wire rope</p> <p>ii) steel aircraft cable</p> <p>iii) roller chain conforming to ASME B29.1</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>
	5.4.8.2	2) Types Prohibited.	<input type="checkbox"/>
	5.4.8.3	3) Minimum Diameter of Suspension Means.	
	5.4.8.4	<p>a) The diameter of hoist rope(s) or cable(s) shall not be less than the following:</p> <p>i) 6 mm (0.25 in.) for elevator wire rope</p> <p>ii) 5 mm (0.1875 in.) for galvanized aircraft cable</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p>
	5.4.8.5	<p>4) Factor of Safety of Suspension Means.</p> <p>a) The suspension means shall have a factor of safety of not less than 8, based on the tension in the rope(s) or chain(s) when raising the car and its rated load.</p> <p>b) In no case, shall the rated breaking strength of the rope(s) or chain(s) be less than 17 800 N (4,000 lbf).</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p>
	5.4.8.6	<p>5) Arc of Contact of Suspension Means on Sheaves and Sprockets...</p> <p>a) The arc of contact of a wire rope on a traction sheave shall be sufficient to produce adequate traction under all load conditions.</p> <p>b) The arc of contact of a chain with a driving sprocket shall be not less than 140 deg.</p>	<p>.....</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p>.....</p>
	5.4.8.7	<p>6) Idle Turns of Ropes on Winding Drums.....</p> <p>a) All wire ropes anchored to a winding drum shall have not less than one full turn of rope on the drum when the car or counterweight has reached its limit of possible overtravel.</p>	<p>.....</p> <p><input type="checkbox"/></p> <p>.....</p>
	5.4.8.8	<p>7) Lengthening, Splicing, Repairing, or Replacing Suspension Means.....</p> <p>a) No car or counterweight wire rope shall be lengthened or repaired by splicing.</p> <p>b) Broken or worn suspension chains shall not be repaired. If one wire rope or a chain of a set is worn or damaged and requires replacement, the entire set of ropes or chains shall be replaced.</p> <p>c) In the event that a worn chain is replaced, the drive sprocket shall also be replaced.</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p>.....</p> <p><input type="checkbox"/></p> <p>.....</p>
	5.4.8.9	<p>8) Securing Ends of Suspension Ropes in Winding Drums.....</p> <p>a) The winding-drum ends of car and counterweight wire ropes shall be secured by clamps on the inside of the drum or by one of the methods specified in 5.4.8.9 for fastening wire ropes to car or counterweight.</p>	<p>.....</p> <p><input type="checkbox"/></p> <p>.....</p>
		<p>9) Fastening of Rope Suspension Means to Cars and Counterweights.....</p> <p>a) The car or counterweight ends of wire ropes shall be fastened by return loop, by properly made individual tapered sockets or by properly attached fittings as recommended by wire-rope manufacturers.</p> <p>b) Clamps of the U-bolt type shall not be used.</p> <p>c) Tapered rope sockets and the method of socketting shall conform to 2.20.9.4 through 2.20.9.6.</p> <p>i) The diameter of the hole in the small end of the socket shall not exceed the nominal diameter of the rope by more than 2.3 mm (0.094 in.).</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>

Machines & Machine Beams & Supports	A17.1	COMMENTS	Passed
Machinery Beams and Supports	5.4.3.1	1) Securing of Machinery Beams and Type of Support. a) All machinery and sheaves shall be so supported and secured as to effectually prevent any part from becoming loose or displaced.	<input type="checkbox"/>
		b) Beams directly supporting machinery shall be of steel, sound timber, or reinforced concrete.	<input type="checkbox"/>
	5.4.3.2	2) Loads on Beams and Supports..... a) Loads on beams and their supports shall be computed as follows: i) If in doubt about the beam supports, request engineering data. <input type="checkbox"/>
	5.4.3.3	3) Fastening of Driving Machines and Sheaves to Underside of Beams..... a) Elevator driving machine and sheaves, shall not be fastened to the underside of the supporting beams at the top of the hoistway. b) Cast iron in tension shall not be used for supporting members for sheaves where they are hung beneath beams. <input type="checkbox"/> <input type="checkbox"/>
	5.4.3.4	4) Factor of Safety of Beams and Supports. a) The factor of safety for beams and their supports shall be not less than 5 for steel and 6 for timber and reinforced concrete.	<input type="checkbox"/>

Driving Machines and Sheaves	5.4.13.1	1) Materials for Drums and Sheaves and Minimum Diameters. a) Winding drums, traction sheaves, and overhead and deflecting sheaves shall be of i) cast iron or steel; ii) a diameter of not less than 30 times the diameter of the wire suspension ropes; iii) where 8 x 19 steel ropes or 7 x 19 aircraft cable are used, the diameter of drums and sheaves shall be permitted to be reduced to 21 times the diameter of the rope. b) The rope grooves shall be machined.	N/A <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	5.4.13.2	2) Factor of Safety..... a) The factor of safety, shall be not less than 8 for wrought iron steel and 10 for cast iron, cast steel, and other metals.	<input type="checkbox"/> <input type="checkbox"/>
	5.4.13.3	3) Set-Screw Fastenings..... a) Set-screw fastenings shall not be used in lieu of keys or pins if the connection is subject to torque or tension. <input type="checkbox"/>
	5.4.13.4	4) Friction Gear, Clutch Mechanism, or Coupling..... a) Friction gear, clutch mechanism, or coupling shall not be used for connecting the drum or sheaves to the main driving gear. <input type="checkbox"/> <input type="checkbox"/>
	5.4.13.5		
	5.4.13.6	5) Use of Cast Iron in Gears..... a) Worm gearing having cast iron teeth shall not be used. <input type="checkbox"/>
	5.4.13.7	6) Driving Machine Brakes..... a) Provided with electrically released spring applied brakes meeting the requirements of 2.24.8 and 2.26.8. <input type="checkbox"/>
	5.4.13.8	7) Operation of Brake..... a) A single ground or short circuit, shall not prevent the brake magnet from allowing the brake to set when the operating device is placed in the stop position. <input type="checkbox"/>
	5.4.13.9	8) Location of Driving-Machine, Alignment, and Guarding of Sheaves. a) The driving machine shall be permitted to be mounted on the car chassis or placed at a remote location. b) If remotely located, all intervening sheaves or sprockets shall be properly alignment. c) All sheaves or sprockets shall be guarded.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	5.4.13.10	9) Driving-Machine Roller-Chain Sprockets..... a) Driving-machine roller-chain sprockets shall be steel and shall conform in all particulars of design and dimensions to ASME B29.1. 10) Manual Operation. a) Manual operation shall conform to 5.3.1.16.2(i).	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Car Enclosures & Car Doors & Gates	A17.1	COMMENTS	Passed
Car Enclosures, Car Doors, and Gates	5.4.4.1.1	1) Car Enclosures Required. a) Except at the entrance, cars shall be enclosed on all sides to a height of not less than 1 070 mm (42 in.).	<input type="checkbox"/>
	5.4.4.1.2	2) Securing of Car Enclosures..... a) The car enclosure shall be securely fastened to the car platform and so supported that it cannot loosen or become displaced in ordinary service or on the application of the car safety or on bumper or buffer engagement. <input type="checkbox"/>
	5.4.4.1.3	3) Deflection of Car Enclosure Walls..... a) The car enclosure walls shall be of such strength and so designed and supported that when subjected to a force of 334 N (75 lbf) applied horizontally at any point on the walls of the enclosure, the deflection will not reduce the running clearance below 19 mm (0.75 in.) nor to exceed 25 mm (1 in.). <input type="checkbox"/>
	5.4.4.1.4	4) Platform Guards (Aprons)..... a) Requirement 5.3.1.9.1(b) applies, and the guard shall extend horizontally within the zone where the doors or gates are unlocked. <input type="checkbox"/>
Car Doors or Gates	5.4.4.2.1	1) Doors or Gates Required. a) A car door or gate that, when closed, will guard the opening to a height of at least 1 070 mm (42 in.) or to the height of the car enclosure, whichever is greater, and shall be provided at each entrance to the car. Car doors shall be permitted to be of solid or openwork construction that will reject a ball 75 mm (3 in.) in diameter.	<input type="checkbox"/>
	5.4.4.2.2	2) Door or Gate Electric Contacts..... a) Car doors or gates shall be provided with an electric contact conforming to 2.14.4.2.3 and 2.14.4.2.5. <input type="checkbox"/>
	5.4.4.2.3	3) Manual Operation..... a) Car doors or gates shall be manually operated. <input type="checkbox"/>
	5.4.4.2.4	4) Latching of Swinging Gates..... a) If the car gate is of the swinging type, opening outward from the car, the electric contact required by 5.4.4.2.2 shall not close until the gate is securely latched. <input type="checkbox"/>
Use of Glass, Plastics, or Acrylics	5.4.4.3.1	1) Glass, plastics, or acrylics, where used in elevator cars, shall conform to the following: a) if of glass, meet the requirements of 2.14.1.8 b) if of plastic or acrylic, it shall meet the requirements of ANSI Z97.1, 16 CFR Part 1201, or CAN/CGSB-12.1, CAN/CGSB-12.11, and CAN/CGSB-12.12, whichever is applicable	N/A <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	5.4.4.3.2	2) Glass, plastic, or acrylics shall be secured as required by 5.4.4.1.2.	<input type="checkbox"/>
	5.4.4.3.3	3) Weather-Resistant Plastics. Plastics shall be of a weather-resistant type.	<input type="checkbox"/>

Capacity	5.4.6.1	1) Rated Load and Platform Area. a) The rated load and net platform area shall conform to 5.3.1.10.1.	<input type="checkbox"/>
	5.4.6.2	2) Shelves or Benches. a) Shelves or benches permanently fixed to the car structure, which reduce the standing area of the platform, are permitted and shall not exceed 0.55 m ² (1.8 ft ²). b) Fifty percent of the net area of shelves or benches shall be added to the standing platform area to calculate the net platform area.	<input type="checkbox"/>
	5.4.6.3	3) Rated Speed. a) The rated speed measured along the incline shall not exceed 0.38 m/s (75 ft/min).	<input type="checkbox"/>

Car Enclosures & Car Doors & Gates (cont.)	A17.1	COMMENTS	Passed
Car and Chassis Construction	5.4.5.1	1) Car and Platform. a) Inclined elevator cars shall have frames and platforms of i) Metal; ii) Combination metal and wood; iii) or other materials of equal strength. iv) Car frames and platforms shall have a factor of safety of not less than 5, based on the rated load; v) suitably prepared and/or protected for exposure to the weather.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	5.4.5.2	2) Chassis Construction..... a) Inclined elevator chassis shall be constructed of metal, except for guiding members. b) Chassis shall have a factor of safety of not less than 5, based on the rated load. c) The chassis guiding members shall be retained and/or enclosed in guides or tracks in such a manner that the chassis cannot be derailed. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	5.4.5.3	3) Use of Cast Iron..... <input type="checkbox"/>
	5.4.5.4	4) Number of Compartments. a) The car shall not have more than one compartment.	<input type="checkbox"/>
	Operating Devices & Safeties	A17.1	COMMENTS
Safeties and Governors	5.4.7.1	1) Car Safeties Required. a) Each inclined elevator shall be provided with a car safety capable of stopping and sustaining the car with rated load.	<input type="checkbox"/>
	5.4.7.2	2) Operation of Car Safeties..... a) The car safety shall be of Type A, B, or C, as specified in 2.17.5, and shall be operated by a speed governor, complying with the following requirements: i) The governor shall be set to trip at not less than 115% nor more than 140% of the rated speed. ii) Type A safeties shall operate as required by 2.17.8.1. iii) Type C safeties shall operate as required by 2.17.8.2. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	5.4.7.3	3) Counterweight Safeties..... a) If the construction at the lower end of the rail is not at or below grade at the termination of the rail, counterweight safeties conforming to 5.4.7 shall be provided, except governor operation of the safeties is not required. <input type="checkbox"/>
	5.4.7.4	4) Location of Speed Governor..... a) The speed governor shall be located where it cannot be struck by the car or counterweight in case of overtravel and where there is sufficient space for full movement of the governor parts and where it is accessible for examination. <input type="checkbox"/>
Opening of Brake and Motor Control Circuits on Safety Application	5.4.7.5	1) Power shall be removed from the driving machine motor and brake before or at the time the safety applies.	<input type="checkbox"/>
Governor Ropes	5.4.7.6	1) The governor ropes, where used, shall be of iron, steel, monel metal, or phosphor bronze not less than 6 mm (0.25 in.) in diameter. 2) Tiller rope construction shall not be used.	<input type="checkbox"/> <input type="checkbox"/>

Operating Devices & Safeties	A17.1	COMMENTS	Passed
Slack-Rope and Slack-Chain Devices for Winding Drum and Roller-Chain-Type Driving Machines	5.4.7.7.1 5.4.7.7.2	1) Winding Drum Machines: a) Inclined elevators shall be provided with a slack-rope device i) of the manually reset type; ii) will remove the power from the motor and brake if the car is obstructed in its descent and the suspension rope slackens. 2) Roller Chain Suspension..... a) Inclined elevators shall be provided with a slack-chain device: i) which will remove the power from the motor and brake if the car is obstructed in its descent and the suspension chains slacken. ii) This device need not be of the manually reset type if the chain sprockets are guarded to prevent the chain from jumping off the sprockets.	N/A <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Application of Car Safety	5.4.7.8 5.3.1.11.3 5.4.7.9 5.4.7.10	The application of car safeties shall comply with 5.3.1.11.3. 1) Application of Safeties. 2) The application of safeties shall conform to 2.17.9.1, 2.17.9.2, and 2.17.9.3. The forces providing the stopping action shall conform to 2.17.9.4 or the following: a) Where guide-rail sections other than those specified in 2.23.3(a) are used, the application of safety stopping forces shall not cause deformation of the guide-rail section upon whose dimensional stability the stopping capability of the safeties is dependent. b) Where the car safety is of the rack-and-pinion type, it shall conform to 4.1.9. 3) Use of Cast Iron in Car Safeties..... a) Cast iron shall not be used in the construction of any part of a car safety, the breakage of which would result in failure of the safety to function to stop and sustain the car. 4) Corrosion-Resistant Bearings in Safeties..... a) Materials used in safeties shall meet the requirements of 2.17.13.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Operating Devices and Control Equipment	5.4.15.1	1) Type of Operation. a) The inclined elevator shall be operated by weatherproof constant pressure or momentary pressure key switches at each landing and on the car.	<input type="checkbox"/>
		b) Key-operated switches shall be of the spring return type and shall 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.	<input type="checkbox"/>
		c) The key shall be Group 4 Security (see 8.1).	<input type="checkbox"/>
	5.4.15.2	2) Emergency Stop Switches in Cars..... <input type="checkbox"/>
		a) An emergency stop switch shall be provided on or adjacent to the car operating panel.	<input type="checkbox"/>
		b) Stop switches shall be of the manually opened and manually closed type with red handles or buttons and conspicuously marked "STOP."	<input type="checkbox"/>
		c) Where springs are used, their failure shall not prevent opening of the switch. <input type="checkbox"/>
	5.4.15.3	3) Control and Operating Circuit Requirements..... <input type="checkbox"/>
	5.4.15.4	a) The design and installation of the control and operating circuits shall conform to 5.3.1.18.2. <input type="checkbox"/>
		4) Hand Rope Operation..... <input type="checkbox"/>
	a) Hand rope operation shall not be used.		

Operating Devices & Safeties	A17.1	COMMENTS	Passed
Electrical Equipment and Wiring	5.4.15.5.1	1) Electrical Equipment and Wiring Requirements. a) Requirements 5.3.1.18.4, 5.3.1.18.5, and 5.3.1.18.6 apply.	<input type="checkbox"/>
	5.4.15.5.2	2) Electrical Connections. a) If the driving machine is mounted on the car chassis, electrical connections between the car and power source shall be provided with a means to remove power if the connecting traveling cable part. All electrical connections to the moving chassis and the stationary connections shall be insulated flexible conductors, in accordance with NFPA 70.	<input type="checkbox"/>
	5.4.15.5.3	3) Traveling Cables..... a) Traveling cables shall be Type EO, ETT, or ETP and shall conform to the requirements of NFPA 70 or CSA-C22.1, whichever is applicable (see Part 9). Where traveling cable voltage exceeds 30 V, a means shall be provided to remove the power automatically upon parting of the traveling cable. <input type="checkbox"/>
Marking Plates	5.4.16	1) Capacity, data, and code data plates shall be provided as required in 5.3.1.20.1, 5.3.1.20.2, and 8.9. 2) All plates shall be weather resistant.	<input type="checkbox"/> <input type="checkbox"/>
Comments:			