Part I - General

Section 1.1 - Scope

1.1.1 Equipment Covered by this Code
This Code covers the design, construction, operation, inspection, testing, maintenance, alteration, and repair of the following equipment and its associated parts, rooms, spaces, and hoistways, where located in or adjacent to a building or structure (see 1.2): (a) hoisting and lowering mechanisms, equipped with a car, that move between two or more landings. This equipment includes, but is not limited to elevators (see 1.3).
(b) power-driven stairways and walkways for carrying persons between landings. This equipment includes, but is not limited to escalators and moving walks (see 1.3).
(c) hoisting and lowering mechanisms equipped with a car that serves two or more landings and is restricted to the carrying of material by its limited size or limited access to the car. This equipment includes, but is not limited to dumbwaiters and material lifts (see 1.3).

1.1.2 Equipment Not Covered by this Code
Equipment not covered by this Code includes, but is not limited to, the following:

(a) personnel hoists within the scope of ANSI A10.4 and CSA-Z185
(b) material hoists within the scope of ANSI A10.5 and CSA-Z256

(c) platform lifts and stairway chairlifts within the scope of ASME A18.1, CSA B355, and CSA B613

(d) manlifts within the scope of ASME A90.1 and CSA B311, and in jurisdictions enforcing NBCC Special Purpose Personnel Elevators (ASME A17.1, Section 5.7)

(e) mobile scaffolds and towers; platforms within the scope of ANSI/SIA A92 and CSA-B354

(f) powered platform and equipment for exterior and interior building maintenance within the scope of ASME A120.1 and CSA-Z271

(g) conveyors and related equipment within the scope of ASME B20.1 (h) cranes, derricks, hoists, hooks, jacks, and slings within the scope of ASME B30, CSA Z150, CSA B167, CSA Z202, and CSA Z248

(i) industrial trucks within the scope of ASME B56 and CSA B335

(j) portable equipment, except for portable escalators, that are covered by 6.1

(k) tiering or piling machines used to move material to and from storage located and operating entirely within one story

(l) equipment for feeding or positioning material at machine tools, printing presses, etc.

(m) skip or furnace hoists

(n) wharf ramps

(o) amusement devices

(p) stage and orchestra lifts

(q) lift bridges

(r) railroad car lifts and dumpers
(5) mechanized parking garage equipment
(t) line jacks, false cars, shafters, moving platforms, and similar equipment used for installing an elevator
(u) platform elevators installed in a ship or offshore drilling rig and used for the purpose of loading and unloading cargo, equipment, and personnel
(v) dock levelers (freight platform lifts) having a rise of 500 mm (20 in.) or less
(w) in Canadian jurisdictions, devices having a rise of 2000 mm (79 in.) or less and used only for the transfer of materials or equipment
(x) in jurisdictions enforcing NBCC, mine elevators within the scope of 5.9

1.1.3 Application of Parts
This Code applies to new installations only, except Part 1, and 5.10, 8.1, 8.6, 8.7, 8.8, 8.9, 8.10, and 8.11, that apply to both new and existing installations.

1.1.4 Effective Date
The requirements of this edition and subsequent addenda to the Code are effective as of the date noted on the Summary of Changes page of this document. The authority having jurisdiction will establish the effective date for their local regulations.

SECTION 1.2 PURPOSE AND EXCEPTIONS

1.2.1 Purpose
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; or
(b) conformance with some of the requirements in ASME A17.1/CSA B44 and for systems, subsystems, components, or functions that do not conform with certain requirements in ASME A17.1/CSA B44, conform with the applicable requirements in CSA B44.7; or
(c) (Deleted as per TX Code 74.100)

1.2.2.1 The specific requirements of this Code shall be permitted to be modified by the authority having jurisdiction based upon technical documentation or
physical performance verification to allow alternative arrangements that will assure safety equivalent to that which would be provided by conformance to the corresponding requirements of this Code.

1.2.2.2 This Code contains requirements that are also covered in the National Building Code of Canada (NBCC). Reference to the NBCC is recognition that said requirements are not within the scope of this Code in Canada. In jurisdictions not enforcing the NBCC, the use of the NBCC is not intended.

1.2.2.3 Exceptions shall be based on the requirements of 1.2.2.1.

SECTION 1.3 DEFINITIONS

Section 1.3 defines various terms used in this Code. In addition, some nomenclature and terminology used in the elevator industry and other ASME publications are defined

access switch: see hoistway access switch.

alteration: any change to equipment, including its parts, components, and/or subsystems, other than maintenance, repair, or replacement alteration, as part of an: a repair or replacement that is included with other work that is classified as an alteration.

alternate level: a floor level identified by the building code or fire authority, other than the designated level.

annunciator, car: an electrical device in the car that indicates visually the landings at which an elevator landing signal registering device has been actuated.

applied frame entrance: a wraparound or partial addition to an existing entrance frame used to improve the appearance or to provide the required clearances.

approved: acceptable to the authority having jurisdiction.

authority having jurisdiction: the organization, office, or individual responsible for enforcement of this Code. Where compliance with this Code has been mandated by legislation or regulation, the "authority having jurisdiction" is the
regulatory authority (see regulatory authority). authorized personnel: persons who have been instructed in the operation of the equipment and designated by the owner to use the equipment.

**automatic transfer device:** a power-operated mechanism that automatically moves a load consisting of a cart, tote box, pallet, wheeled vehicle, box, or other similar object from and/or to the car.

**auxiliary power lowering device:** an alternatively powered auxiliary control system that will, upon failure of the main power supply, allow a hydraulic elevator to descend to a lower landing. brake, driving machine, elevator, dumbwaiter, or material lift: an electromechanically or electro-hydraulically released spring, or gravity applied device, that is part of the electric driving machine of the elevator, dumbwaiter, or material lift used to apply a controlled force at a braking surface to hold or retard the elevator, dumbwaiter, or material lift.

See Non-mandatory Appendix F.

**electro-hydraulically released:** a means of release in which an electric current applied to a solenoid valve or the motor of a hydraulic pump directs pressurized hydraulic fluid to an actuator (such as a hydraulic jack) that overcomes a resisting force (such as a spring) as long as the electric current flows.

**electromechanically released:** a means of release in which an electric current applied to an actuator (such as a solenoid) causes an electromagnetic force that overcomes a resisting force (such as a spring) as long as the electric current flows.

**brake, driving machine, escalator, or moving walk:** an electromechanical device that is part of the electric driving machine of the escalator or moving walk, used to control, dual bridge thyristor converter: a motion control for a DC motor that
supplies the armature with variable voltage of either polarity, and is capable of current flow in both directions.

**control, generator field:** a motion control that is accomplished by the use of an individual generator for each driving-machine motor wherein the voltage applied to the motor armature is adjusted by varying the strength and direction of the generator field current.

**control, multivoltage:** a motion control that is accomplished by impressing successively on the armature of the driving-machine motor a number of substantially fixed voltages such as may be obtained from multi-commutator generators common to a group of elevators.

**control, rheostatic:** a motion control that is accomplished by varying resistance and/or reactance in the armature and/or field circuit of the driving-machine motor.

**control, single bridge thyristor converter:** a motion control for a DC motor that supplies the armature with variable voltage of fixed polarity. The field is reversed to control direction and to cause regeneration.

**control, electrohydraulic:** a motion control in which the acceleration, speed, retardation, and stopping are governed by varying fluid flow to the hydraulic jack.

**control, static:** a motion control in which control functions are performed by solid-state devices.

**control, operation:** that portion of a control system that initiates the starting, stopping, and direction of motion, in response to a signal from an operating device.

**operation, automatic:** operation control wherein the starting of the elevator, dumbwaiter, or material lift car is effected in response to the momentary
actuation of operating devices at the landing, and/or of operating devices in the car identified with the landings, and/or in response to an automatic starting mechanism, and wherein the car is stopped automatically at the landings.

**operation, group automatic:** automatic operation of two or more non-attendant elevators equipped with power-operated car and hoistway doors. The operation of the cars is coordinated by a supervisory control system including automatic dispatching means whereby selected cars at designated dispatching points automatically close their doors and proceed on their trips in a regulated manner. It includes one button in each car for each floor served and "UP" and "DOWN" buttons at each landing (single buttons at terminal landings). The stops set up by the momentary actuation of the car buttons are made automatically in succession as a car reaches the corresponding landing, irrespective of its direction of travel or the sequence in which the buttons are actuated. The stops set up by the momentary actuation of the landing buttons may be accomplished by any elevator in the group, and are made automatically by the first available car that approaches the landing in the corresponding direction.

**operation, nonselective collective automatic:** automatic operation by means of one button in the car for each landing served and one button at each landing, wherein all stops registered by the momentary actuation of landing or car buttons are made irrespective of the number of buttons actuated or of the sequence in which the buttons are actuated. With this type of operation, the car stops at all landings for which buttons have been actuated, making the stops in the order in which the landings are reached after the buttons have been actuated, but irrespective of its direction of travel.

**operation, selective collective automatic:** automatic operation by means of one button in the car for each landing served and by "UP" and "DOWN" buttons at the landings, wherein all stops registered by the momentary actuation of the car buttons are made as defined under nonselective collective automatic operation, but wherein the stops registered by the momentary actuation of the landing
buttons are made in the order in which the landings are reached in each
direction of travel after the buttons have been actuated. With this type of
operation, all "UP" landing calls are answered when the car is traveling in the up
direction and all "DOWN" landing calls are answered when the car is traveling in
the down direction, except in the case of the uppermost or lowermost calls, that
are answered as soon as they are reached, irrespective of the direction of travel
of the car.

**operation, single automatic:** automatic operation by means of one button in the
car for each landing served and one button at each landing, so arranged that if
any car or landing button has been actuated the actuation of any other car or
landing operating button will have no effect on the operation of the car until the
response to the first button has been completed.

**operation, car switch:** operation control wherein the movement and direction of
travel of the car are directly and solely under the control of the attendant by
means of a manually operated car switch or of continuous pressure buttons in
the car.

**operation, car switch automatic floor-stop:** operation in which the stop is
initiated by the attendant from within the car with a definite reference to the
landing at which it is desired to stop, after which the slowing down and stopping
of the elevator is effected automatically.

**operation, continuous-pressure:** operation control by means of buttons or
switches in the car and at the landings, anyone of which may be used to control
the movement of the car as long as the button or switch is manually maintained
in the actuating position.

**operation, preregister:** operation control in which signals to stop are registered
in advance by buttons in the car and at the landings. At the proper point in the
car travel, the attendant in the car is notified by a signal, visual, audible, or
otherwise, to initiate the stop, after which the landing stop is automatic.
**operation, signal:** operation control by means of single buttons or switches (or both) in the car, and "UP" or "DOWN" direction buttons (or both) at the landings, by which predetermined landing stops may be set up or registered for an elevator or for a group of elevators.

The stops set up by the momentary actuation of the car buttons are made automatically in succession as the car reaches those landings, irrespective of its direction of travel or the sequence in which the buttons are actuated. The stops set up by the momentary actuation of the "UP" and "DOWN" buttons at the landing are made automatically by the first available car in the group approaching the landings in the corresponding direction, irrespective of the sequence in which the buttons are actuated. With this type of operation, the car can be started only by means of a starting switch or button in the car.

**control room, elevator, dumbwaiter, material lift:** an enclosed control space outside the hoistway, intended for full bodily entry, that contains the motor controller.

The room could also contain electrical and/or mechanical equipment used directly in connection with the elevator, dumbwaiter, or material lift but not the electric driving machine or the hydraulic machine.

(See Non-mandatory Appendix Q.)

**control space, elevator, dumbwaiter, material lift:** a space inside or outside the hoistway, intended to be accessed with or without full bodily entry, that contains the motor controller. This space could also contain electrical and/or mechanical equipment used directly in connection with the elevator, dumbwaiter, or material lift but not the electric driving machine or the hydraulic machine.

(See Non-mandatory Appendix Q.)

**NOTE:** See 2.7.6.3.2 for an exception regarding the location of a motor controller.

**control system:** the overall system governing the starting, stopping, direction of motion, acceleration, speed, and retardation of the moving member.
See Non-mandatory Appendix A.

**controller**: a device or group of devices that serves to control in a predetermined manner the apparatus to which it is connected.

**controller, motion**: an operative unit comprising a device or group of devices for actuating the moving member.

**controller, motor**: the operative units of a motion control system comprising the starter devices and power conversion equipment required to drive an electric motor.

**controller, operation**: an operative unit comprising a device or group of devices for actuating the motion control.

**deck, escalator**: see *escalator deck*.

**designated attendant**: where elevator operation is controlled solely by authorized personnel (attendant service, independent, hospital service, and other similar operations). designated level: the main floor or other floor level that best serves the needs of emergency personnel for fire-fighting or rescue purposes identified by the building code or fire authority.

**dispatching device, elevator automatic**: a device, the principal function of which is to either (a) operate a signal in the car to indicate when the car should leave a designated landing, or (b) actuate its starting mechanism when the car is at a designated landing displacement switch: a device actuated by the displacement of the counterweight, at any point in the hoistway, to provide a signal that the counterweight has moved from its normal lane of travel or has left its guide rails.

**door**: the movable portion(s) of an entrance that closes (a) the openings. It consists of one or more solid face panels that are permitted to be equipped with a vision panel. **door, folding**: a hinged door consisting of two or more panels that fold and move horizontally.

**door, horizontally sliding**: a door that moves horizontally.
**center-opening:** a horizontally sliding door consisting of two panels, so arranged to open away from each other.

**center-opening, multiple-speed:** a horizontally sliding door consisting of more than two panels, so arranged that the panels or groups of panels open away from each other.

**multiple-speed:** a horizontally sliding door with two or more panels, so arranged to open away from one side.

**single-speed:** a one-panel horizontally sliding door.

**door or gate, manually operated:** a door or gate that is opened and closed by hand.

**door or gate, power-operated:** a door or gate that is opened and closed by a door or gate power-operator.

**door or gate, self-closing:** a manually opened door or gate that closes when released.

**door, swinging:** a door that pivots around a vertical axis.

**door, vertically sliding:** a counterweighted or counterbalanced door consisting of one or more panels that move vertically to open or close.

**door, vertically sliding sequence operation:** where the opening and closing relationship of the car and hoistway doors do not occur simultaneously.

**door, biparting:** a vertically sliding door consisting of two or more sections, so arranged that the sections or groups of sections open away from each other.

**door, wraparound:** a horizontally sliding door that bends around a car enclosure.

**door locked out of service:** a hoistway entrance in which the door is mechanically locked by means other than escalator panel, exterior: the panel enclosing the exterior side of the balustrade.

**escalator panel, interior:** the panel located between the skirt and the escalator high deck or the handrail stand. escalator skirt: the fixed, vertical panels located immediately adjacent to the steps.
**escalator skirt cover, dynamic:** the stationary cover that protects the interface between the dynamic skirt panel and the escalator balustrade.

**escalator skirt, dynamic:** see *skirt panel, dynamic.*

**escalator well way:** an opening in a floor provided for escalator installation between two levels of a building. escalators, tandem operation: escalators used in series with common intermediate landings.

**factor of safety:** the ratio of the ultimate strength to the working stress of a member under maximum static loading, unless otherwise specified in a particular requirement.

**fail safe:** a characteristic of a system or its elements whereby any failure or malfunction affecting safety will cause the system to revert to a state that is known to be safe.

**fire barrier:** a fire-resistance-rated vertical or horizontal assembly of material designed to restrict the spread of fire in which the openings are protected.

**fire-protection rating:** a designation indicating the duration of the fire test exposure to which a fire door assembly (entrance) was exposed and for which it met all the acceptance criteria as determined in accordance with a recognized fire test standard. Ratings are stated in hours or minutes.

**fire-resistance rating:** a designation indicating the duration of the fire test exposure to which components of building construction (walls, floors, roofs, beams, and columns) are exposed and for which it met all the acceptance criteria as determined in accordance with a recognized fire test standard. Ratings are stated in hours or minutes.

**fire-resistive construction:** a method of construction that prevents or retards the passage of hot gases or flames, specified by the building code.

**fixed side panel:** a panel used to close a hoistway enclosure opening on the side of a hoistway entrance.

**flat steps:** the distance, expressed in step lengths, that the leading edge of the escalator step travels after emerging from the comb before moving vertically.
**gate**: the moveable portion(s) of an entrance that closes the opening. A gate has through openings.

**horizontally sliding collapsible gate**: a series of horizontally sliding vertical members, joined by a scissors-like linkage that allows the assembly to collapse.

**horizontally sliding non-collapsible gate**: a non-collapsible assembly consisting of one or more sections that slide horizontally.

**vertically sliding gate**: a counterweighted or counterbalanced assembly, consisting of one or more sections that move vertically to open or close.

gate, semiautomatic: a gate that is opened manually and that is closed automatically as the car leaves the landing.

**governor**: see *speed governor*.

**governor pull-through tension (force)**: the magnitude of the tensile load developed in the moving governor rope after the governor rope retarding means is actuated.

**governor rope retarding means**: a mechanical means of developing a sufficient force in the governor rope to activate the car or counterweight safeties or to trip the governor rope releasing carrier, where used. Such mechanical means include, but are not limited to, ropegripping jaws, clutch mechanisms, and traction arrangements.

**handrail stand**: the uppermost portion of the balustrade that supports and guides the handrail.

**hoistway (shaft), elevator, dumbwaiter, or material lift**: an opening through a building or structure for the travel of elevators, dumbwaiters, or material lifts, extending from the pit floor to the roof or floor above.

**hoistway, blind**: the portion of a hoistway where hoistway entrances are not provided.

**hoistway, multiple**: a hoistway with more than one elevator, dumbwaiter, or material lift.

**hoistway, single**: a hoistway with a single elevator, dumbwaiter, or material lift.
hoistway, mine: The area within a mine shaft, and its aboveground structure required for the elevator equipment, associated supports, and operations, including a minimum of 450 mm (18 in.) around same.

hoistway access switch: a switch, located at a landing, the function of which is to permit operation of the car with the hoistway door at this landing and the car door or gate open, in order to permit access to the top of the car or to the pit.

hoistway door: see door.

hoistway door electric contact: see door or gate electric contact.

hoistway door or gate locking device: a device that secures a hoistway door or gate in the closed position and prevents it from being opened from the landing side except under certain specified conditions.

hoistway door combination mechanical lock and electric contact: a combination mechanical and electrical device with two related, but entirely independent functions, that are (a) to prevent operation of the driving machine by the normal operating device unless the hoistway door is in the closed position (b) to lock the hoistway door in the closed position and prevent it from being opened from the landing side unless the car is within the landing zone.

NOTE: As there is no positive mechanical connection between the electric contact and the door locking mechanism, this device ensures only that the door will be closed, but not necessarily locked, when the car leaves the landing. Should the lock mechanism fail to operate as intended when released by a stationary or retiring car-cam device, the door can be opened from the landing side even though the car is not at the landing. If operated by a stationary car-cam device, it does not prevent opening the door from the landing side as the car passes the floor.

hoistway door interlock: a device having two related and interdependent functions, that are (a) to prevent the operation of the driving machine
by the normal operating device unless the hoistway door is locked in the closed position \((b)\) to prevent the opening of the hoistway door from the landing side unless the car is within the landing zone and is either stopped or being stopped

**hoistway door interlock retiring cam device:** a device that consists of a retractable cam and its actuating mechanism and that is entirely independent of the car door or hoistway door power operator.

**hoistway gate separate mechanical lock:** a mechanical device the function of which is to lock a hoistway gate in the closed position after the car leaves a landing and prevent the gate from being opened from the landing side unless the car is within the landing zone.

**hoistway enclosure:** the fixed structure, consisting of vertical walls or partitions, that isolates the hoistway from all other areas or from an adjacent hoistway and in which entrances are installed.

**hoistway gate:** usually a counterweighted (counterbalanced) assembly, consisting of one or more sections that are guided in the vertical direction to open or close. The gate may be of wood or metal construction. Wood gates may consist of either horizontal or vertical slats. Metal gates are usually constructed of perforated or expanded metal.

**hospital service:** a special case of operation by a designated attendant used only for medical emergencies.

**hydraulic jack:** a unit consisting of a cylinder equipped with a plunger (ram) or piston, that applies the energy provided by a liquid under pressure.

**hydraulic machine:** a unit consisting of pump, motor, valves, and associated internal piping, that converts electrical energy and supplies it as a liquid under pressure.

**in-car stop switch:** a device located in the car and accessible for operation by elevator personnel only, that, when manually operated, causes the electric power to be removed from the driving-machine motor and brake of an electric
elevator or from the electrically operated valves and pump motor of a hydraulic elevator.

**inclined elevator:** see *elevator, inclined.*

**installation:** a complete elevator, dumbwaiter, escalator, material lift, or moving walk, including its hoistway, hoistway enclosures and related construction, and all machinery and equipment necessary for its operation.

**installation, existing:** an installation that has been completed or is under construction prior to the effective date of this Code.

**installation, new:** any installation not classified as an existing installation by definition, or an existing elevator, dumbwaiter, escalator, material lift, inclined lift, or moving walk moved to a new location subsequent to the effective date of this Code.

**intended car movement:** controlled movement of an elevator car, including starting, leveling, running, and stopping, due to

(a) operation control

(b) motion control

(c) continuous pressure on an operating device during inspection operation, inspection operation with open door circuits, or hoistway access operation

**NOTE:** "Stopping" includes movement of an elevator car towards rest once stopping is initiated, and any movement of an elevator car due to suspension system elasticity that occurs after the brake is set, since this movement was the result of the intended operation.

**interlock:** see *car door interlock and hoistway door interlock.*

**labeled/marked:** equipment or material to which has been attached a label, symbol, or other identifying mark of an approved or accredited independent certifying organization, concerned with product evaluation, that maintains periodic inspection of production of labeled! marked equipment or material, and by whose labeling! marking the manufacturer indicates compliance with appropriate standards or performance in a specified manner.
NOTE: For the purpose of this definition, *accredited* means that an organization has been evaluated and approved by an Authorized Agency to operate a Certification/Listing program, and is designated as such in a publication of the Authorized Agency.

**landing, dumbwaiter:** that portion of a floor, balcony, platform, or landing door used to discharge and receive materials.

**landing, elevator or material lift:** that portion of a floor, balcony, or platform used to receive and discharge passengers or freight.

**landing, bottom terminal:** the lowest landing served by the elevator or material lift that is equipped with a hoistway entrance.

**landing, top terminal:** the highest landing served by the elevator or material lift that is equipped with a hoistway entrance.

**landing, escalator or moving walk:** the stationary area at the entrance to or exit from an escalator, a moving walk, or moving walk system.

**landing, lower, escalator:** that landing of least elevation of the two landings.

**landing, lower, moving walk:** that landing of least elevation of the two landings.

On moving walks where the two landings are of equal elevation, the lower landing is that landing designated by the manufacturer.

**landing, upper, escalator:** that landing of greatest elevation of the two landings.

**landing, upper, moving walk:** that landing of greatest elevation of the two landings. On moving walks where the two landings are of equal elevation, the upper landing is that landing designated by the manufacturer.

**landing, next available:** the first landing in the direction of travel that the elevator is electrically and mechanically capable of serving with a normal slowdown and stop.

**landing zone:** a zone extending from a point 450 mm (18 in.) below a landing to a point 450 mm (18 in.) above the landing.

**left, right convention:** left and right designations of escalator and moving walk components are determined by facing the equipment at the lower landing.
leveling: controlled car movement toward the landing, within the leveling zone, by means of a leveling device, that vertically aligns the car platform sill relative to the hoistway landing sill to attain a predetermined accuracy.

**leveling device, elevator, dumbwaiter, or material lift car:** the portion of a motion control system comprised of a device or group of devices that, either automatically or under control of the operator, initiates leveling, and automatically stops the car at the landing.

**leveling device, anticreep:** a leveling device used on hydraulic elevators to correct automatically a change in car level caused by leakage or contraction of fluid in the hydraulic system.

**leveling device, inching:** a leveling device that is controlled by the operator by means of continuous-pressure switches.

**leveling device, one-way automatic:** a device that corrects the car level only in case of under-run of the car, but will not maintain the level during loading and unloading.

**leveling device, two-way automatic maintaining:** a device that corrects the car level on both under-run and overrun, and maintains the level during loading and unloading.

**leveling device, two-way automatic non-maintaining:** a device that corrects the car level on both under-run and over-run, but will not maintain the level during loading and unloading.

**leveling zone:** the limited distance above or below an elevator, dumbwaiter, or material lift landing within which the leveling device is permitted to cause movement of the car toward the landing.

**listed/certified:** equipment or materials accepted for inclusion in a publication by a certifying organization.

**NOTE:** The means for identifying listed/certified equipment may vary for each organization concerned with product evaluation, some of which do not recognize equipment as listed/ certified unless it is also labeled/marked. The authority
having jurisdiction utilizes the system employed by the listing/certifying organization to identify a listed/certified product.

load, dynamic: the load applied as a result of acceleration or deceleration.

load, impact: a suddenly applied load.

load, static: the load applied as a result of the weight.

lower landing, escalator: see landing, lower, escalator.

lower landing, moving walk: see landing, lower, moving walk.

machine, driving: the power unit that applies the energy necessary to drive an elevator or other equipment covered by the scope of this Code.

driving machine, electric: a driving machine in which the energy is applied by an electric motor. It includes the motor, driving-machine brake, and the driving sheave or drum, together with its connecting gearing, belt, or chain, if any.

See Non-mandatory Appendix F.

driving machine, direct: an electric driving machine, the motor of which is directly connected mechanically to the driving sheave, drum, or shaft without the use of belts or chains, either with or without intermediate gears.

gereed driving machine: a direct driving machine in which the energy is transmitted from the motor to the driving sheave, drum, or shaft through gearing.

winding drum machine: a geared driving machine in which the suspension ropes are fastened to and wind on a drum.

traction machine: a direct driving machine in which the motion of a car is obtained through friction between the suspension ropes and a traction sheave.

gereed traction machine: a geared-drive traction machine.

gearless traction machine: a traction machine, without intermediate gearing, that has the traction sheave and the brake drum mounted directly on the motor shaft.
**Worm-geared machine:** a direct driving machine in which the energy from the motor is transmitted to the driving sheave or drum through worm gearing.

**Driving machine, indirect:** an electric driving machine, the motor of which is connected indirectly to the driving sheave, drum, gear reducer, or shaft by means of a belt drive or chain drive.

**Belt driving machine:** an indirect driving machine equipped with a belt system as the connecting means.

**Chain driving machine:** an indirect driving machine with a chain system as the connecting means.

**Driving machine, rack-and-pinion:** an electric driving machine in which the motion of the car is obtained by a power-driven rotation pinion(s) mounted on the car, traveling on a stationary rack mounted in the hoistway.

**Driving machine, screw:** an electric driving machine, the motor of which drives a nut on a vertical screw or rotates a vertical screw to raise or lower an elevator car.

**Driving machine, chain, dumbwaiter or material lift:** a driving machine in which the motion of a car is obtained through a connection between a driven sprocket and the suspension chains. **Driving machine, hydraulic:** a driving machine in which the energy is provided by a hydraulic machine and applied by a hydraulic jack.

**Chain-hydraulic drive machine:** a hydraulic driving machine in which the drive member of the hydraulic jack is connected to the car by chains or indirectly coupled to the car by means of chains and sprockets.

**Direct hydraulic driving machine:** a hydraulic driving machine in which the driving member of the hydraulic jack is directly attached to the car frame or platform.

**Roped-hydraulic driving machine:** a hydraulic driving machine in which the driving member of the hydraulic jack is connected to the car by wire ropes or indirectly coupled to the car by means of wire ropes and sheaves. It includes
multiplying sheaves, if any, and their guides. machine room and control room, remote, elevator, dumbwaiter, material lift: a machine room or control room that is not attached to the outside perimeter or surface of the walls, ceiling, or floor of the hoistway.

(See Non-mandatory Appendix Q.)

machine room, elevator, dumbwaiter, material lift: an enclosed machinery space outside the hoistway, intended for full bodily entry, that contains the electric driving machine or the hydraulic machine. The room could also contain electrical and/or mechanical equipment used directly in connection with the elevator, dumbwaiter, or material lift. (See Non-mandatory Appendix Q.)

machinery space, elevator, dumbwaiter, material lift: a space inside or outside the hoistway, intended to be accessed with or without full bodily entry, that contains elevator, dumbwaiter, or material lift mechanical equipment, and could also contain electrical equipment used directly in connection with the elevator, dumbwaiter, or material lift. This space could also contain the electric driving machine or the hydraulic machine. (See Non-mandatory Appendix Q.)

machinery space and control space, remote, elevator, dumbwaiter, material lift: a machinery space or control space that is not within the hoistway, machine room, or control room, and that is not attached to the outside perimeter or surface of the walls, ceiling, or floor of the hoistway. (See Non-mandatory Appendix Q.)

main floor: the floor providing normal egress from a building.

maintained pressure: the hydraulic pressure between the pressure source and the control valves of a maintained pressure hydraulic elevator.

maintenance: a process of routine examination, lubrication, cleaning, and adjustment of parts, components, and/or subsystems for the purpose of ensuring performance in accordance with the applicable Code requirements. (See also repair and replacement.)
**manually (manual) reset, elevator:** (a) a type or feature of an elevator part or component that, when actuated, requires intervention of a person in order to reinstate it to its non-actuated state. (b) a type of action required to be taken by a person to reinstate an elevator part or component from an actuated state to its non-actuated state.

**manual reset, escalator, and moving walk:** a means, not accessible to the general public, requiring personal intervention by an authorized person prior to restarting the escalator or moving walk.

**material lift:** a hoisting and lowering mechanism normally classified as an elevator, equipped with a car that moves within a guide system installed at an angle of greater than 70 deg from the horizontal, serving two or more landings, for the purpose of transporting materials that are manually or automatically loaded or unloaded. Material lifts without an automatic transfer device are Type A or Type B. On Type A material lifts no persons are permitted to ride. On Type B material lifts authorized personnel are permitted to ride.

*may:* indicates permission, not a mandatory requirement.

**mechanical lock:** see hoistway door combination mechanical lock and electric contact and hoistway gate separate mechanical lock.

**mode of operation:** a way in which a safety-related system is intended to be used, with respect to the rate of demands made upon it, that may by either

(a) **low demand mode:** where the frequency of demands for operation made on an electrical safety function is not greater than one per year and not greater than twice the proof-test frequency

(b) **high demand or continuous mode:** where the frequency of demands for operation made on a safety related system is greater than one per year or greater than twice the proof-test frequency

**NOTE:** High demand or continuous mode covers those safety related systems that implement continuous control to maintain functional safety.
(c) proof-test: a periodic test performed to detect failures in a safety-related system so that, if necessary, the system can be restored to an "as new" condition or as close as practical to this condition.

NOTE: See note 61508-4, Clause 3.8.5 for additional information on this definition.

modernization: see alteration.

module: the increment of rise in a modular escalator that one drive unit is capable of powering.

molding, escalator: see escalator molding.

moving walk: a type of passenger-carrying device on which passengers stand or walk, and in which the passenger-carrying surface remains parallel to its direction of motion and is uninterrupted.

rope sprocket drive: a driving means consisting of wire rope with fixed links at constant intervals throughout its length. The links engage in slots on a grooved drive cog to provide a positive drive force.

runby, bottom, elevator car: the distance between the car buffer striker plate and the striking surface of the car buffer when the car floor is level with the bottom terminal landing.

runby, bottom, elevator counterweight: the distance between the counterweight buffer striker plate and the striking surface of the counterweight buffer when the car floor is level with the top terminal landing.

runby, top, direct-plunger hydraulic elevator: the distance the elevator car can run above its top terminal landing before the plunger strikes its mechanical stop.

running gear, escalator: all the components of an escalator moving along the tracks.

running gear, moving walk: all the components of a moving walk moving along the tracks.

safety, car or counterweight: a mechanical device attached to the car, car frame, or to an auxiliary frame; or to the counterweight or counterweight frame; to stop and hold the car or counterweight under one or more
of the following conditions: predetermined overspeed, free fall, or if the suspension ropes slacken.

**safety, self-resetting**: a car or counterweight safety released and reset by movement in the up direction.

**safety bulkhead**: a closure at the bottom of the cylinder located above the cylinder head and provided with an orifice for controlling the loss of fluid in the event of cylinder head failure.

**safety integrity level (SIL)**: the discrete level (one out of a possible four) for specifying the safety integrity requirements of the safety functions to be allocated to the E/E/PE safety-related system, where safety integrity level 4 has the highest level of safety integrity and safety integrity level 1 has the lowest.

**screw column**: a vertical structural member provided with screw threads that support the car of a screw column elevator, dumbwaiter, or material lift. The screw column may be either in tension or compression.

**seismic switch**: a device activated by ground movement to provide a signal that a potentially damaging earthquake is imminent.

**sequence operation**: see door, vertically sliding sequence operation.

**shaft**: see hoistway.

**shall**: indicates a mandatory requirement.

**should**: indicates a recommendation, not a mandatory requirement.

**sight guard**: a vertical member mounted on the hoistway side of the leading edge of the hoistway door. It is used to reduce the opening between the leading edges of the hoistway door and the car door.

**signal device, elevator car flash**: one providing a signal light in the car, that is illuminated when the car approaches the landings at which a landing signal registering device has been actuated. signal registering device, elevator landing: a button or other device located at the elevator landing, that, when actuated by a waiting passenger, causes a stop signal to be registered in the car.
**signal system, elevator separate:** one consisting of buttons or other devices located at the landings, that, when actuated by a waiting passenger, illuminates a flash signal or operates an annunciator in the car indicating floors at which stops are to be made.

**signal transfer device, elevator automatic:** a device by means of which a signal to be registered in a car is automatically transferred to the next car following, in case the first car passes a floor for which a signal has been registered without making a stop.

**signal transfer switch, elevator:** a manually operated switch, located in the car, by means of which the operator can transfer a signal to the next car approaching in the same direction, when the operator desires to pass a floor at which a signal has been registered in the car.

**skirt, escalator:** see *escalator skirt*.

**skirt panel, dynamic:** the moving vertical panels, with a positive mechanical connection to the running gear, adjacent to, and moving with the steps.

**slack-rope switch:** a device that automatically causes the electric power to be removed from the elevator driving machine motor and brake when the suspension ropes of a winding drum machine become slack.

**sleeving (liner):** the insertion of a smaller diameter cylinder inside the existing cylinder of a hydraulic jack.

**sling:** see *car frame*.

**slope, moving walk:** the angle that the centerline of the tread way makes with the horizontal.

**software system failure:** a behavior of the software, including its support (host) hardware, that is not in accordance with the intended function.

**solid-state device:** an element that can control current flow without moving parts.
speed governor: a continuously operating speed monitoring and detection device that, at predetermined speeds, provides signals to the controller and imparts a retarding force to activate the car or counterweight safety.

speed governor, escalator and moving walk: a continuously operating speed monitoring and detection device that, at predetermined speeds, provides signals to the controller to stop the escalator or moving walk.

starters control panel, elevator: an assembly of devices by means of which the starter may control the manner in which an elevator or group of elevators function.

static switching: switching of circuits by means of solid state devices.

tandem operation escalators: see escalators, tandem operation.

terminal landing: see landing, elevator or material lift.

terminal speed-limiting device, emergency: a device that automatically reduces the car and counterweight speed to within the rated buffer striking speed prior to buffer engagement.

terminal speed-reducing device, hydraulic: a device on hydraulic elevators that will reduce the speed prior to contacting the stop ring in the up direction.

terminal stopping device, emergency: a device that automatically causes the power to be removed from the driving-machine motor and brake if the car fails to slow down as intended when approaching the terminal landing.

terminal stopping device, final: a device that automatically causes the power to be removed from a driving machine motor and brake, or from a hydraulic machine, independent of the functioning of the normal stopping means, normal terminal stopping device, and any emergency terminal speed-limiting device, after the car has passed a terminal landing.

terminal stopping device, machine final (stop-motion switch): final terminal stopping device operated directly by the driving machine.
terminal stopping device, normal: device(s) to slow down and stop an elevator, dumbwaiter, or material lift car automatically at or near a terminal landing, independently of the functioning of the normal stopping means.

threshold comb, moving walk: see comb, escalator and moving walk.
threshold plate, moving walk: see comb plate, escalator and moving walk.
transom: a panel or panels used to close a hoistway enclosure opening above a hoistway entrance.
traveling cable: a cable made up of electric conductors, that provides electrical connection between an elevator, dumbwaiter, material lift car, or counterweight, and a fixed outlet in the hoistway or machine room.
treadway, moving walk: the passenger-carrying member of a moving walk.
truck zone, elevator: the limited distance above an elevator landing within which the truck zoning device permits movement of the elevator car.
truck zoning device, elevator: a device that will permit the operator in the car to move a freight elevator within the truck zone with the car door or gate and a hoistway door open.
type test: a test carried out by or witnessed by a certifying organization concerned with product evaluation and the issuing of certificates to ensure conformance to Code requirements.
unintended car movement: any movement of an elevator car that is not intended car movement resulting from a component or system failure.
unlocking device, hoistway door: a mechanical device, the function of which is to unlock and permit the opening of a hoistway door from a landing irrespective of the position of the car.
unlocking zone: a zone extending from the landing floor level to a point not less than 75 mm (3 in.) nor more than 450 mm (18 in.) above and below the landing.
upper landing, escalator: see landing, upper, escalator.
upper landing, moving walk: see landing, upper, moving walk.
**valley break**: a broken wire in a wire rope in which the outside wire of a strand breaks in the immediate vicinity of the point where it contacts a wire or wires of an adjacent strand, generally at a point not visible when the wire rope is examined externally. One end of the broken wire is long enough to reach from one valley to the next one and the other end of the broken wire generally cannot be seen.

**valve, overspeed**: a device installed in the pressure piping of a hydraulic elevator, between the hydraulic machine and the hydraulic jack, that restricts and ceases oil flow from the hydraulic jack through the pressure piping when such flow exceeds a preset value.

**volatile memory**: memory lost when operating power is removed.

**waiting-passerenger indicator**: an indicator that shows at which landings and for which direction elevator hall stop-or-signal calls have been registered and are unanswered.

**weatherproof**: so constructed or protected that exposure to the weather will not interfere with successful operation.

**width, moving walk**: the exposed width of the treadway.

**window**: an assembly consisting of a surrounding frame and one or more sashes, ventilators, or fixed lights, or a combination of these, designed to be installed in a wall opening for the purpose of admitting light or air, or both.

**working pressure**: the pressure measured at the hydraulic machine when lifting car and its rated load at rated speed, or with Class C2 loading when leveling up with maximum static load.

**yield strength**: the tensile stress that is sufficient to produce a permanent deformation of 0.2%.