6.1.3.3.11 Guard at Ceiling Intersection

(a) On high deck balustrades, a solid guard shall be provided in the intersection of the angle of the outside balustrade deck and the ceiling or soffit, under the following conditions:
(1) where the clearance between the outside edge of the deck and the ceiling or soffit is 300 mm (12 in.) or less; or
(2) where the projected intersection of the outside deck and the ceiling or soffit is 600 mm (24 in.) or less from the centerline of the handrail.

(b) On low deck balustrades, a solid guard shall be provided to protect the intersection formed by the top of the handrail and the plain of the ceiling or soffit where the centerline of the handrail is 350 mm (14 in.) or less from the ceiling or soffit.

(c) The vertical edge of the guard shall be a minimum of 350 mm (14 in.) in length.

(d) The escalator side of the vertical face of the guard shall be flush with the face of the wellway.

(e) The exposed edge of the guard shall present a minimum width of 25 mm (1 in.) and a minimum radius of 12 mm (0.5 in.).

(f) Guards are permitted to be of glass or plastic, provided they meet the requirements of 6.1.3.3.3.

See also Nonmandatory Appendix I, Fig. I-5, I-13 and I-14.
Fig. I-4  Skirt or Dynamic Skirt Panel: Step Nose
(6.1.3.3.6)

Fig. I-5  Ceiling or Soffit Guard
(6.1.3.3.11)

Fig. I-6  Antislide Device
(6.1.3.3.12)

See also I-13 and I-14
Fig. 1-13 Ceiling or Soffit Guard
High Deck Escalators

(6.1.3.3.11)

- Guard required when centerline of handrail is less than 600 mm (24 in) [Distance D] from edge of opening or adjacent escalator truss

- OR -

When edge of outer decking is less than 300 mm (12 in) [distance E] from edge of opening or adjacent escalator truss

- The vertical edge of the guard shall be a minimum of 350 mm (14 in) in length.

- The escalator side of the vertical face of the guard shall be flush with the face of the wellway or adjacent truss cladding.

- The exposed edge of the guard shall present a minimum width of 25 mm (1 in.) and a minimum radius of 12 mm (0.5 in.).

- Guards are permitted to be of glass or plastic, provided they meet the requirements of 6.1.3.3.
Fig. 1-14 Ceiling or Soffit Guard
Low Deck Escalators
(6.1.3.3.11)

- Guard required when centerline of handrail is less than 350 mm (14 in) [Distance D] from edge of opening or adjacent escalator truss.
- The vertical edge of the guard shall be a minimum of 350 mm (14 in) in length.
- The escalator side of the vertical face of the guard shall be flush with the face of the wellway or adjacent truss cladding.
- The exposed edge of the guard shall present a minimum width of 25 mm (1 in.) and a minimum radius of 12 mm (0.5 in.).
- Guards are permitted to be of glass or plastic, provided they meet the requirements of 6.1.3.3.3.

Rationale: To add clarifying diagrams for escalator ceiling intersection guards.
Record 15-2890

*Proposed Revision to A17.1, Requirement 6.1.5.3.5, 6.1.6.3.2, 6.1.6.3.4 Auxiliary Brake:*

6.1.5.3.5 Auxiliary Brake. Escalators not utilizing dynamic braking (6.1.5.3.4) and with a rise greater than 6.00 m (20 ft) shall be equipped with an auxiliary brake that complies with brake requirements in 6.1.5.3.1 and 6.1.5.3.3.

a) application of the auxiliary brake shall be caused only:
   1) by actuation of the Escalator Speed Monitoring Device (6.1.6.3.2) or
   2) by actuation of the Drive Chain Device if the auxiliary brake is located on the main shaft and utilized to also function as a Main Drive Shaft Brake (6.1.5.3.2) when a Main Drive Shaft brake is required

b) auxiliary brake shall be applied after the escalator has stopped.

c) where simultaneous application of the driving machine brake and auxiliary brake occur, requirement 6.1.5.3.1(c) does not apply.

6.1.6.3.2 Escalator Speed-Monitoring Device. An escalator speed-monitoring device shall be provided.

(a) The operation of the device shall cause the electric power to be removed from the driving-machine motor and brake, and the auxiliary brake (6.1.5.3.5) if so equipped, should the speed exceed the rated speed by more than 20%.

(b) The device shall be of the manual-reset type.

6.1.6.3.4 Drive-Chain Device. When the driving machine is connected to the main drive shaft by chain, a device shall be provided that will cause the application of the brake on the main drive shaft, if so equipped [see 6.1.5.3.2(a) and 6.1.5.3.5(b)], and will also cause the electric power to be removed from the driving-machine motor and brake if any drive chain between the machine and the main drive shaft becomes disengaged from the sprockets. The device shall be of the manual-reset type.

*Rationale: In order to provide an additional means to bring an escalator to a controlled stop in the event of over speed situations resulting from malfunctioning machine braking, a requirement for an auxiliary brake, on higher rise escalators, compliant with Machine Brake requirements is created. It is to be actuated by over speed conditions, or, when located on the main shaft and utilized to fulfill Main Drive Shaft Brake requirements when it is required, by the Drive Chain Device. The simultaneous application of the driving machine brake and auxiliary brake should only occur in an overspeed situation. When actuated by a properly operating broken drive chain device, the machine brake is effectively disconnected from the step band. Controlling the escalator in the event of an overspeed situation by applying the auxiliary and machine brakes outweighs the potential hazard of a higher deceleration than normal stop. The auxiliary brake is applied after the escalator is stopped to mechanically exercise the brake components in an effort to ensure reliability.*

*Comments:*
1) The Auxiliary Brake’s primary purpose is to be a backup, and Machine Brake to guard against Machine brake malfunction or escalator overspeeding.
2) Auxiliary Brake language has been added to 6.1.6.3.2 and 6.1.6.3.4.
3) 6.1.5.3.4 is attached for reference.

Approved in TN 12-1111
6.1.5.3.4 Escalator Driving Machine Motor Controlled Dynamic Braking.
Motor controlled dynamic braking of an escalator by variable frequency control of the escalator driving machine motor shall be permitted provided that:
   a) The motor controlled dynamic braking function conforms to acceleration requirements in 6.1.5.3.1(c) and, where applicable, the stopping distance requirements in 6.1.5.3.1(d) (5).
   b) The escalator driving machine brake complying with 6.1.3.9.3 and 6.1.5.3.1 shall be applied not later than when the escalator has stopped. Interruption of electrical power to the escalator or machine motor shall automatically cause application of the machine brake.
   c) Activation of electrical protective devices that do not specifically permit dynamic braking shall stop the escalator only by the removal of electrical power from the driving machine motor and brake.
   d) Stopping performance shall be monitored in conformance with 6.1.6.10 throughout the retardation period at intervals not greater than 25 ms and shall cause the removal of electrical power from the driving machine motor and brake if the deceleration is not conforming to the requirements in 6.1.5.3.1 (c) or it is determined that the stopping rate will not result in a stopping distance conforming to the requirements of 6.1.5.3.1(d)(5), where applicable. Non-conformance shall require a manual reset.
Record 17-193

Proposed Revision to A17.1, Requirement 8.6.5.14.9 Category 1 Testing for Plunger Gripper:

8.6.5.14.9 Plunger Gripper
Plunger Grippers shall be subjected to the following test with no load in the car using a written procedure supplied by the plunger gripper manufacturer or the person or firm maintaining the equipment [see 8.6.1.2.2(b)(1) On-Site Documentation]:

(a) Plunger Grippers shall be tested by actuating the plunger gripper
(b) Plunger Grippers shall be tested in the down direction with the car operating at the slowest possible speed
(c) The plunger gripper shall stop & hold the empty car.
(d) A periodic test record as required in 8.6.1.7.2 shall be provided.

8.11.3.1.5 Pit
(r) Plunger Gripper (3.17.3)(Item 5.17)

Rationale: Provide periodic inspection & testing requirements for plunger grippers.

Record 17-197

Proposed Revision to A17.1, Requirements 8.6.1.2.2(b) Onsite Documentation:

8.6.1.2.2 (b) Procedures for inspections and tests not described in ASME A17.2 and procedures or methods required for elevator personnel to perform maintenance, repairs, replacements, and adjustments, as follows (also see 8.10.1.5 and 8.11.1.7):

Rationale: To refer to additional unique or product-specific procedures or methods in 8.6.1.2.2(b).
Revise A17.1-2019 as follows:

8.7.7 Alterations to Escalators and Moving Walks

8.7.7.1 Escalators

8.7.7.1.7 Step System

(a) Any alteration to the step system shall require conformance with 6.1.3.3.5, 6.1.3.5 [except as specified in 8.7.6.1.7(b)], 6.1.3.6 [except as specified in 8.7.6.1.1], 6.1.3.8, 6.1.3.9.4, 6.1.3.10.4, 6.1.3.11, 6.1.6.3.3, 6.1.6.3.9, 6.1.6.3.11, 6.1.6.3.14, and 6.1.6.5.

(b) Steps having a width less than 560 mm (22 in.) shall not be reduced in width by the alteration.

RATIONALE: To affirm and clarify the exception permitted to 6.1.3.6.5 (Flat Steps) specified in General Requirements (8.7.6.1.1).

8.7.6.1.9 Trusses and Girders. Any alterations or welding, cutting, and lengthening, or splicing of the truss structural member or girder shall conform to 8.7.1.4 and 8.7.1.5. Alterations shall result in the escalator’s conforming to 6.1.3.7, 6.1.3.9.1, and 6.1.3.10.1. The installation of a new escalator into an existing truss shall conform to all of the requirements of 6.1.

RATIONALE: To clarify that “the truss” in this requirement means truss structural members corresponding/ equivalent to “members on which the support of the... escalator depends” referenced in 8.7.1.4 and 5. Parts or members that are a part of or affixed to the truss, but are not structural or supporting the escalator, would not require compliance with 8.7.1.4 and 5. Conformance to 8.7.1.5 is a necessary additional requirement for modification of structural members.

The installation of a new escalator into an existing truss shall conform to all of the requirements of 6.1.

Installation of a new escalator including the truss is a new installation and not an alteration.

8.7.6.1.11 Rated Load and Speed. Any alteration that increases the rated load or rated speed or both shall result in the escalator’s conforming to 6.1.

RATIONALE: In accordance with the Escalator and Moving Walk Committee, any alteration that increases the rated load or rated speed or both shall conform to 6.1.

8.7.6.1.13 Driving Machine, Motor, and Brake

(a) Driving Machine. An alteration to the driving machine shall result in the escalator’s conforming to 6.1.3.9.2, 6.1.3.10.3, 6.1.4.1, 6.1.5.1, 6.1.5.2, 6.1.5.3.1, 6.1.5.3.2, 6.1.6.3.4, and 6.1.6.3.8.

(b) Driving Motor. An alteration to the drive motor shall result in the escalator’s conforming to 6.1.3.9.2, 6.1.3.10.3, 6.1.4.1, 6.1.5.2, 6.1.5.3.1, 6.1.5.3.2, 6.1.6.3.2, 6.1.6.3.8, and 6.1.6.3.10.
(c) Machine Brake. An alteration to the machine brake shall result in the escalator's conforming to 6.1.3.9.3, 6.1.3.10.2, and 6.1.5.3.1.

RATIONALE: Editorial change for clarity.

8.7.6.14 Lighting, Access, and Electrical Work. An alteration to or addition of lighting, access, or electrical work shall conform with to the specific requirements within 6.1.7 for that change.

RATIONALE: Consistency with language.

8.7.6.2 Moving Walks

...  

8.7.6.2.9 Trusses and Girders. Any alterations or welding, cutting, and lengthening, or splicing of the any truss structural member or girder shall conform to 8.7.1.4 and 8.7.1.5. Alterations shall result in the moving walk's conforming to 6.2.3.9, 6.2.3.10.1, and 6.2.3.11.1. The installation of a new moving walk into an existing truss shall conform to all of the requirements of 6.2.

RATIONALE: to clarify that “the truss” in this requirement means truss structural members corresponding/ equivalent to “members on which the support of the.....moving walk depends” referenced in 8.7.1.4 and 8.7.1.5. Parts or members that are a part of or affixed to the truss, but are not structural or supporting the escalator, would not require compliance with 8.7.1.4 and 8.7.1.5. Conformance to 8.7.1.5 is a necessary additional requirement for modification of structural members.

8.7.6.2.11 Rated Load and Speed. Any alteration that increases the rated load or rated speed or both shall result in the escalator's conforming with to 6.2.

RATIONALE: In accordance with the Escalator and Moving Walk Committee, any alteration that increases the rated load or rated speed or both shall conform to 6.2.

8.7.6.2.13 Driving Machine, Motor, and Brake

(a) Driving Machine. An alteration to the driving machine shall result in the moving walk's conforming to 6.2.3.10.2, 6.2.3.10.3, 6.2.4.1, 6.2.5.1, 6.2.5.2, 6.2.5.3.1, 6.2.5.3.2, 6.2.6.3.4, and 6.2.6.3.8.

(b) Driving Motor. An alteration to the drive motor shall result in the moving walk's conforming to 6.2.3.9.2, 6.2.3.10.3, 6.2.4.1, 6.2.5.2, 6.2.5.3.1, 6.2.5.3.2, 6.2.6.3.2, 6.2.6.3.8, and 6.2.6.3.10.

(c) Machine Brake. An alteration to the machine brake shall result in the moving walk's conforming to 6.2.3.10.3, 6.2.3.10.2, and 6.2.5.3.1.

RATIONALE: Editorial change for clarity.

8.7.6.2.14 Lighting, Access, and Electrical Work. An alteration to or addition of lighting, access, or electrical work shall conform with to the specific requirements within 6.2.7 for that change.
RATIONALE: Editorial change for clarity.

8.7.6.2.18 Entrance and Egress. Any alteration to the entrance or egress end shall comply with 6.2.3.8.1 through 6.2.3.8.4.

RATIONALE: To add requirements for alterations on Entrances and Egresses on Moving Walk’s consistent with Escalators.
Record 17-3230

Proposed Revision to A17.1, Requirements 8.5.1 Balustrade Construction:

8.5.1 Balustrade Construction
Balustrades shall be designed to withstand the vertical inertial force due to the weight of the balustrade and the horizontal seismic forces as follows:

(a) The component operating weight, $W_p$, is the sum of the balustrade dead load, and decking weight if supported by the balustrade, and 70% of the machinery rated load (see 6.1.3.9.2) and the seismic force computed as defined in 8.4.13 and 8.4.14.

(b) The Horizontal seismic forces resulting from 50% of the machinery rated load in addition to the loads imposed by the balustrade components shall be distributed along the exposed length of the handrail from entry newel tangent to exit newel tangent as depicted in Fig. 8.5.1.

Rationale: 8.5.1 is incorrect to apply the seismic load, related to the passenger load, to the escalator balustrade in the vertical direction rather than the horizontal direction as originally intended. In addition, it is appropriate to split distribute the balustrade horizontal force from of a fully loaded escalator evenly between the two balustrades at the handrails. Changes are made to correct.

Background:
It was the original objective in the rewrite of 8.5 to relate a horizontal seismic force applied to the escalator balustrade to the live/passenger load (mass) since it is reasonable that in a seismic occurrence, passengers presumably would grasp and impart a horizontal force to the handrail related to their body mass. As written, it instead applies a vertical weight load to the balustrade handrail. This merits correction.

While lightly loaded escalators may tend to have a predominance of passengers on one side or the other, it is reasonable that a fully loaded escalator with rated load will evenly split distribute the passenger load between both handrails. This reflects one larger passenger on every step but on alternating sides. Adjustment to the balustrade load reflecting this condition merits change.
2.24.3 Factor of Safety for Driving Machines, Driving Machine Brakes, Sheaves, and Drums

The factor of safety to be used in the design of driving machines, braking components, sheaves, and drums used with suspension means and compensating means shall be not less than

(a) 8 for metals having an elongation of at least 14% in a gauge length of 50 mm (2 in.) when tested in accordance with ASTM E8.

(b) 10 for cast iron, or for metals having an elongation of less than 14% in a gauge length of 50 mm (2 in.) when tested in accordance with ASTM E8.

(c) 10 for sheaves of plastic, fiber-reinforced plastic, or combinations thereof. The material used shall ensure that the factor of safety is not less than 8 during the service life of the sheave.

Factor of safety shall not apply to the friction surfaces of braking components.

2.24.8.3 Driving-Machine Brake. The driving machine shall be equipped with a friction brake applied by a spring or springs, or by gravity, and released electromechanically or electrohydraulically (see Section 1.3) in conformance with 2.24.3 and 2.26.8. The driving-machine brake, on its own, shall be capable of

(a) holding the car at rest with its rated load (see 2.16.8 and 2.26.8).

(b) holding the empty car at rest.

(c) decelerating the empty car traveling in the up direction from the speed at which the governor overspeed switch is set. Any deceleration not exceeding 9.8 m/s² (32.2 ft/s²) is acceptable provided that all factors such as, but not limited to, system heat dissipation and allowable buffer striking speeds are considered.

Rationale: Brake components have to conform with driving machine factors of safety.
Proposed Revision to A17.1, Requirement 6.2.3.1 Angle of Inclination:

6.2.3.1 Angle of Inclination. The angle of inclination for the Treadway from the horizontal moving walk landing plate shall not exceed 3 deg within 900mm (36 in.) of the comb intersection line with the treadway at the entrance and egress ends and shall not exceed 12 deg from the horizontal at any point.

Rationale: The Angle of Inclination requirement in the Walk section was originally written with the assumption that the building floor surface at the landings is always horizontal and specified a maximum angle of inclination of the walk landing to the horizontal. It is not the case that the floors are always horizontal resulting in a possible excessive angle between the floor and the walk landings and the requirement is changed to correct for this condition.
Proposed changes to A17.1-2016, 5.3.1.10.1.

5.3.1.10.1 Capacity.

The inside net platform area shall be determined at a point 1000mm (39in.) above the floor and inside of any panels or wall surfaces, but exclusive of any hand-rails and space for doors or gates as shown in figure 2.16.1.1 for horizontal sliding car doors or as shown in figure 5.3.1.10.1 for other car doors or gates. To allow for variations in car designs, an increase in the maximum inside net area not exceeding 5% shall be permitted.

The maximum inside net platform area shall not exceed 1.4 m² (15 ft²). The minimum rated load shall be not less than the following:

(a) For net platform areas up to and including 1.1 m² (12 ft²), the rated load shall be not less than 195 kg/m² (40 lb/ft²) or 159 kg (350 lb), whichever is greater.

(b) For net platform areas greater than 1.1 m² (12 ft²), the rated load shall be based upon 305 kg/m² (62.5 lb/ft²).

Rationale: To provide a standard means of measuring the net car platform area as it is currently not defined.

Fig. 5.3.1.10.1
Inside Net Platform Areas for Private Residence Elevators
Record 18-1140

Revise A17.1-2019 as follows:

8.7.2.22.4 Compensation. Where compensation means is added or altered it shall conform to Section 2.21.4 and, where applicable, requirements 2.1.2.3(c), 2.4, 2.22.4.10.3 and 2.26.2.3. For inspection test requirements, see 8.10.2.3.2(ii).

8.10.2.3.2

... (ii) Where alteration consists of a change to the Counterweights (8.7.2.22); the affected components shall be tested as specified in 8.10.2.2.3(e), (x), (dd), (ii), (jj), and (kk).

Rationale: Adding Alteration and additional Inspection and Test requirements for the Addition or Alteration of Compensation Means.

Note: 8.10.2.3.2(ii) changes are based on the approved Record17-443.

Record 18-1150

7.2.6.7 Suspension Means Monitoring and Protection Splicing and Replacement of Suspension Ropes:

Requirement 2.20.8 does not apply.

Rationale: Correct section heading to match heading of 2.20.8.
Proposed Revision to A17.1, Requirement 8.10.4 Acceptance Inspection & Tests of Escalators & Moving Walks:

8.10.4 Acceptance Inspection & Tests of Escalators & Moving Walks

8.10.4.2.1 Alterations shall be inspected for compliance with the applicable requirements specified in Section 8.7.

Check Code data plate for compliance with 8.7.1.8.

NOTE: For Code data plate, see 8.7.1.7.

Rationale: Requirement 8.7.1.7 pertains to Repairs & Replacements. 8.10.4.2.1 should refer the user of the code to 8.7.1.8 to verify code data plate information pertinent to an alteration just as seen for Electric and Hydraulic Type Elevators.
5.2.1.20 Suspension Ropes Means and Their Connections.
Suspension ropes and their connections shall conform to Section 2.20, except as modified by 5.2.1.20.1 through 5.2.1.20.23 for 2.20.1 and 2.20.3. Suspension ropes and their connections shall also conform to 5.2.1.20.1 and 5.2.1.20.2.

5.2.1.20.1 Suspension Means. Suspension means shall comply with 2.20.1 or 5.2.1.20.1.1. Cars shall be suspended by ropes attached to the car frame or passing around sheaves attached to the car frame specified in 2.15.1. Suspension means ropes that have previously been installed and used on another installation shall not be reused. Only rope having the following classifications shall be used for the suspension of limited-use/limited-application elevator cars and for the suspension of counterweights:
(a) Iron (low-carbon steel) or steel wire rope, having the commercial classification “Elevator Wire Rope,” or wire rope specifically constructed for elevator use. The wire material for these wire ropes shall be manufactured by the open-hearth or electric furnace process or their equivalent.

5.2.1.20.1.1 Alternate Suspension Means
Aircraft cable rope of 7 x 19 construction, classified as MIL-DTL-83420M Spec, shall be permitted in those applications where aircraft cable rope is not subjected to crushing pressures, with the following exceptions permitted:
(1) nonjacketed, carbon steel, tin- or zinc-coated (Type 1A) 7 x 19 construction (Section 3.4.3.3 of MIL-DTL-83420M Spec)
(2) identifying color tracer filaments are not required (Section 3.6.2 of MIL-DTL-83420M Spec)

5.2.1.20.2 Factor of Safety. The factor of safety shall comply with 2.20.3 or 5.2.1.20.2.1 be specified in accordance with the following:
(a) “Elevator Wire Rope” [see 5.2.1.20.1(a)] shall comply with 2.20.3.
(b) 5.2.1.20.2.1 “Aircraft Cable Rope” [see 5.2.1.20.1.1(b)] shall have a factor of safety of not less than 7.5.

Rationale: To allow alternate suspension means and align requirements with section 2.20.
Record 18-2454

Revise A17.1 as follows:

8.7.3.31.5 Controllers
...
(e) Where a controller for the elevator operation on emergency or standby power systems or Firefighters’ Emergency Operation is installed, see 8.7.3.31.828.

Rationale: To correct incorrect reference.
Record 18-2482

Revise A17.1-2019 as follows:

8.6.1.4.1 On-Site Maintenance Records

...(b) Repair and Replacement Records. The following repairs and replacements shall be recorded and shall be kept on-site for viewing by elevator personnel in either hard copy or electronic format. Instructions for locating the records of each unit for immediate viewing shall be posted on the controller or at the means necessary for test (see 2.7.6.4). The provided instructions shall be permanently legible with characters a minimum of 3 mm (0.125 in.) in height. The record shall include an explanation of the repair or replacement, date, and name of person(s) and/or firm performing the task. The record of repairs and replacements shall be retained by the owner of the equipment for the most recent 5 yr years or from the date of installation or adoption of ASME A17.1-2013/CSA B44-13 and later editions this Code edition, whichever is less, or as specified by the authority having jurisdiction, and shall be a permanent record for the installation. These records may be kept remotely from the site.

...(c) Other Records. The following written records shall be kept on-site for each unit. Instructions for locating the records of each unit for immediate viewing shall be posted on the controller or at the means necessary for test (see 2.7.6.4). The provided instructions shall be permanently legible with characters a minimum of 3 mm (0.125 in.) in height. These records shall be retained for the most recent 5 yr years or from of the date of installation or adoption of ASME A17.1-2013/CSA B44-13 and later editions this Code edition, whichever is less or as specified by the authority having jurisdiction. The record shall include the date and name of person(s) and/or firm performing the task.

...

Rationale: In [8.6.1.4.1(b) and (c)] to make language specific to the edition in which it was first used, to clarify that "yr" is years and in [8.6.1.4.1(c)] to provide an editorial correction where an "or" was left out of original text.
Record 18-2496

Revise A17.1-2019 as follows:

5.9.20.2 Devices permanently attached to the suspension ropes that absorb moisture, accumulate debris, restrict suspension rope movement, or impede suspension rope examinations shall be prohibited, with the exception of the suspension means and their connections as specified in Section 2.20.

Rationale: Prohibit auxiliary devices permanently attached to the suspension ropes, which are not specified in Section 2.20, that could cause localized corrosion on the suspension ropes in the mine environment or interfere with the required suspension rope examinations.

Record 18-2497

Proposal to Revise A17.1-2019 as follows

(Note: Requirement 5.9.2.2 was approved in Record 17-1565):

5.9.2.2 When the pit extends below the mine level, a standard railing conforming to 2.10.2 shall be provided around the pit. Where necessary, guarding shall be provided to prevent accidental contact with moving elevator equipment.

Rationale: To better describe a standard railing by referencing the requirements in A17.1. Modification of this section is being proposed to make the language consistent with that typically used in A17.1.
Record 18-2567

Proposed Revision to A17.1, Requirement 8.9.3, 8.10.1.1.4, 8.10.2.2.3(n), 8.10.2.2.5 Pit (c), 8.11.3.1.5(d), 8.10.2.2.5 Pit (b)(4), and 8.10.4.1.1(f) Material and Construction, Data Plates, Marking Plates, and Signage:

Revision #1

Revise 8.9.3:
CODE DATA PLATE

8.9.3 Material and Construction
The code data plate shall conform to 8.13.1.
Existing Code data plates that comply with the edition of the Code under which they were installed and have legible accurate information do not have to be changed to comply with these material and construction requirements.

Rationale: To conform to the new requirements for permanent marking plates and tags.

Revision #2

8.10.1.1.4 Acceptance Test Tags. A metal tag with the applicable Code requirement(s) and date(s) performed, and the name of the person or firm performing the test and the inspector witnessing the test, including their inspector’s ID number and certifying organization, shall be installed to be readily visible and shall be permanently attached to the controller of each unit. The tag shall conform to 8.13.3.

Rationale: To conform to the new requirements for permanent marking plates and tags.

Revision #3

8.10.2.2.3 (n) Counterweight Safeties (Item 3.29). Visually inspect counterweight safeties, including marking plate (2.17.4) (2.17.14)

Rationale: Corrected reference number.

Revision #4

8.10.2.2.5 Pit (c) Car and Counterweight Buffer (Item 5.9). Marking plates shall be checked in accordance with 2.22.3.3, 2.22.4.11, or 2.22.5.56 for proper application. No test shall be required on spring-type or elastomeric buffers.
The following tests on oil-type buffers shall be performed (Item 5.9):

Rationale: Corrected wrong reference number.
8.11.3.1.5(d) Car Buffer (3.6.3, 3.6.4, and 3.22.1) (Item 5.12). Marking plates shall be checked for proper application in accordance with 2.22.3.3 or 2.22.5.56. No test shall be required on spring-type or elastomeric buffers.

**Rationale:** Corrected wrong reference number

Revision #5

8.10.2.2.5 Pit (b)(4) warning signs [2.4.4(b)1.6]

**Rationale:** Corrected wrong reference number.

Revision #6

8.10.4.1.1 (f) Caution Signs (6.1.6.2, 6.1.6.9.1 or 6.2.6.9.4) (Items 7.6 and 9.6)

**Rationale:** Correct references.

**Overall Rationale:** Update references to comply with current requirements. This will bring these items into sync with the 2019 edition and new section Req. 8.13.
Record 18-2575

Revise A17.1-2019 as follows:

2.15.6.4 Requirements for Wood Used for Platform Floors and Stringers. Wood used for platform stringers and platform floors and sub-floors shall be of structural quality lumber or exterior-type plywood conforming to the requirements of the following:

(a) ASTM D245, Structural Grades of Lumber
(b) ASTM D198, Static Tests of Timbers in Structural Sizes
(c) ANSI Voluntary Product Standard PS 1-74 or CSA O151, Softwood Plywood, Construction and Industrial

Rationale: The above changes to 2.15.6.4 address the outdated wood platform requirements within PS-1 74. Remove “Exterior-type” due to changes within PS 1 plywood changes from PS 1-74 to PS 1-09. Since PS 1-09 removed the PS 1-74 Interior Type bonded with interior glue and Interior Type bonded with intermediate bonded glue classifications, there is no need to add an additional requirement for specifying the bonding classification type. Both are required to be exposed to dry and wet weather, but Exposer 1 is allowed during construction phase and Exterior is allowed long term exposer. The PS 1-09 bonding classification Exposure 1 and Exterior are both exterior bonding and have the same test requirements. Only difference, Exposure 1 is allowed to have a slightly higher failure rates. Also, the CSA O151 bonding tests and failure requirements are similar with PS 1-09 Exposure 1 testing requirements.

Conclusion: Both Exposure 1 and Exterior bonding classifications are suitable for elevator use.

Section 9

<table>
<thead>
<tr>
<th>Standards</th>
<th>Description</th>
<th>Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSA O151-M1978 (same as Canadian Softwood Plywood)</td>
<td></td>
<td>CSA</td>
</tr>
<tr>
<td>CAN/CSA-O151-M78 (latest edition)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Proposed Revision to A17.1, Requirement 8.10.4.1.2(d)(7) Drive Machine Brake:

8.10.4.1.2 Internal Inspection and Tests

(d) Drive Machine and Brake.
(7) The person or firm installing the equipment shall provide a written procedure to demonstrate that whenever the driving machine brake is applied that the escalator braking distance monitor detects when the maximum and minimum stopping distance is not achieved and prevents the unit from restarting unless the device is manually reset.

Rationale: To add testing requirements for Requirements 6.1.6.7 and 6.2.6.8 added in A17.1.

---

Proposed Revision to A17.1, Requirement 8.10.2.2.3 Percent Counterweight Overbalance:

8.10.2.2.3 Top-of-Car
(k) Data Plate (2.16.3.3 and, 2.20.2, and 2.24.2.3.5) (Item 3.27). Where applicable, the percent counterweight overbalance shown on or adjacent to the crosshead data plate shall be verified by one of the following methods:

(a) placing weight inside the car until it balances the counterweight (for 2:1 roping the car and counterweight sheaves need to be at the same vertical height) or
(b) weighing the counterweight and then weighing the car with the appropriate weight inside the car
(c) using the motor drive data information

Rationale: Revise to include testing information based on approved revisions to A17.1 per Record 17-338 to verify the percent counterweight overbalance.
Record 18-2587 (editorial)

Proposed Editorial Revision to A17.1, References to 8.6.4.20(1), (3), (4), (10) Periodic Test Record:

8.6.4.20.1 Car and Counterweight Safeties.

…
(b)(2) A test tag periodic test record as required in 8.6.1.7.2 shall be provided.

8.6.4.20.3 Oil buffers

…
(g) A test tag periodic test record as required in 8.6.1.7.2 shall be provided.

8.6.4.20.4 Driving-Machine Brake(s).

…
(b)(2) A test tag periodic test record as required in 8.6.1.7.2 shall be provided.

8.6.4.20.10 Braking system, Traction, and Traction Limits.

…
(b)(2) A test tag periodic test record as required in 8.6.1.7.2 shall be provided.

Rationale: Ensure language referencing requirement 8.6.1.7.2 accurately reflects the title of the requirement.
Record 18-2792

Revise A17.1-2019 as follows:

8.4.1 Horizontal Car and Counterweight Clearances
8.4.1.1 Between Car and Counterweight and Counterweight Screen Guard. The following clearances shall supersede those specified in 2.5.1.2.

... 8.4.1.1.3 The running clearance between the counterweight assembly and the nearest obstruction, including counterweight screen guards, shall be not less than 25 mm (1 in.).

Rationale: To be consistent with the verbiage used in the remainder of the code. For example see 2.3.2.3; 2.5.1.2; 2.7.5.2.1; 2.7.2.4; 8.7.2.27.6(b) and 8.7.3.31.7(b).

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hydraulic elevator, 3.3
inclined elevator, 5.1.1.2
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private residence elevator, 5.3.1.13.2
rooftop elevator, 5.6.1.3
shipboard elevator, 5.8.1.2
sidewalk elevator, 5.5.1.3
special purpose personnel elevator, 5.7.3

Counterweight screen (see also Counterweight, guarding of)
clearance, 2.5.1.2

Rationale: To be correct the index to reflect the proposed changes to 8.4.1.
Record 18-2957

**Background:**
Requirement 8.10.3.2.2 was updated without notifying the A17 Hydraulic Committee to update their reference in conjunction with the changes. Changes were made between the A17.1-2004 and 2007 editions.

**Revision Proposal**
3.18.4.1 Metal Stops and/or Other Means. Metal stops and/or other means shall be provided at one end of the plunger and at the packing head end of the cylinder to prevent the plunger from traveling beyond the limits of the cylinder. The metal stops and/or other means shall be so designed and constructed as to stop the plunger traveling in the up direction at maximum speed under full load pressure, should the normal terminal stopping device (see 3.25.1) fail to operate, or at a reduced speed when a terminal speed-reducing device is provided as required by 3.25.2. No running test onto the stop ring is required [see 8.10.3.2.2(sz)].

**Rationale**
Reference in ASME A17.1, 3.18.4.1 to requirement 8.10.3.2.2(s) should be revised to 8.10.3.2.2(z).
Proposed Revision to A17.1, Requirements 6.2.6.3.8 Disconnected Motor Safety Device:

6.2.6.3.8 Disconnected Motor Safety Device. If the drive motor is attached to a gear reducer by means other than a continuous shaft, mechanical coupling, or toothed gearing, a device shall be provided that will cause initiation of dynamic braking (6.2.5.3.3) or the electric power to be removed from the driving machine motor and brake (see 6.2.5.3.1) if the motor becomes disconnected from the gear reducer. The device shall be of the manual-reset type.

Rationale: In reviewing the A17.1 changes to permit dynamic braking (TN 12-1111) updates, there appears to be an error on the devices identified as permitting dynamic braking. 6.2.6.3.8 Disconnected Motor Safety Device was amended to permit dynamic braking in the final version of TN 12-1111. Given that the motor is required for dynamic braking, this appears to be an error (note also that 6.1.6.3.10 Disconnected Motor Safety Device for escalators does not permit use of dynamic braking. 6.2.6.3.8 needs to revert to its A17.1-2016 language or be modified. Dynamic braking cannot stop the moving walk when the motor becomes disconnected from the gear reducer. Reverting to the A17.1-2016 does not preclude application of dynamic braking to the disconnected motor for purposes of stopping the free spinning motor rotor. Electrical power must be removed from the drive machine brake which must be connected to the gear reducer per 6.1.5.3.1(e) and 6.2.5.3.1(e) when the drive motor is attached to a gear reducer by means other than a continuous shaft, mechanical coupling, or toothed gearing.
Record 19-14

Proposed Revision to A17.1, Requirements

7.5.2.6 Requirement 2.15.11 does not apply. For Type A and Type B Material Lifts the vertical deflection of the platform when the rated load is in any position on the platform shall not exceed 5 mm per 1 000 mm (0.25 in. per 50 in.) of platform length. The maximum allowable deflection shall be 50 mm (2 in.).

Rationale: Require both type A and type B material lift to comply with the deflection requirements for the safety of materials being loaded on and off and the material handler. Previously, there was no requirement for deflection for type A material lifts.
Record 19-106

Revise A17.1-2019 as follows:

Proposal to modify the Mine Elevator Scope 5.9 to include requirements for rack and pinion mine elevators as follows:

**SECTION 5.9  
MINE ELEVATORS**

In jurisdictions not enforcing NBCC, Section 5.9 applies to elevators as covered by Part 2 and Section 4.1, permanently installed in mine shafts. The purpose is to provide vertical transportation of mine personnel, their tools, equipment, and mine supplies. By reason of their limited use and the types of construction of the mines served, compliance with Part 2 and Section 4.1 is modified as follows (see also Section 1.3):

**5.9.3X Rack and Pinion Elevators**

Rack and pinion elevators shall comply with Section 4.1 and shall be equipped with supplemental mechanical safety devices (i.e. safety hooks) to prevent pinion separation from the rack in all directions if any roller(s) fails. The supplemental mechanical safety device (i.e. safety hooks) shall have a factor of safety of not less than 5. Obstructions in the hoistway shall be considered when calculating the maximum dynamic loads on the mechanical safety devices.

*Rationale:* Rack and pinion elevators installed at mines can be exposed to inadvertent obstructions in the open hoistway. The strength requirements for supplemental mechanical safety devices (i.e. safety hooks, refer to A17.1 Handbook for diagram) will prevent the elevator car pinion and safety pinion from disengaging from the rack under the force of the drive motor and gravity if a hoistway obstruction is struck by the elevator car.

**8.6.7.9.X** Rack and pinion elevator pits shall be kept free of water and debris that would corrode the supporting structure. The drain holes at the bottom of the rack and pinion elevator supporting structure shall be kept open and free of debris that would prevent proper draining of water accumulated inside the supporting structure.

*Rationale:* The pits of rack and pinion elevators installed in mines naturally accumulate debris and water which can interfere with the proper draining of water accumulated inside the supporting structure and contribute to the deterioration of the supporting structure.
Record 19-107

Proposed Revision to A17.1, Machine Brake Inspection Testing of Escalators and Moving Walks:

SECTION 8.6 MAINTENANCE, REPAIR, REPLACEMENT, AND TESTING

8.6.1.2.2 On-Site Documentation.
The documents specified in (a) through (c) shall be written and permanently kept on-site in the machine room, machinery space, control room, control space, or in the means necessary for test (2.7.6.4) in hard copy for each unit for elevator personnel. The documentation specified in (d) shall be on-site and available to the specified personnel.

(a) Up-to-date wiring diagrams detailing circuits of all electrical protective devices (see 2.26.2) and critical operating circuits (see 2.26.3)
(b) Procedures for inspections and tests not described in ASME A17.2 and procedures or methods required for elevator personnel to perform maintenance, repairs, replacements, and adjustments, as follows:

(1) all procedures specifically identified in the Code as required to be written (e.g., 8.6.4.20.8, checkout procedure for leveling; 8.6.5.16.5, checkout procedure for overspeed valve; and 8.6.8.15.7, checkout procedure for reversal stop switch)
(2) unique maintenance procedures or methods required for inspection, tests, and replacement of SIL rated E/E/PES electrical protective devices and circuits [See 2.26.4.3.2, 2.26.9.3.2(b), 2.26.9.5.1(b), and 2.26.9.6.1(b).]
(3) unique maintenance procedures or methods required for inspection, tests, and replacement of equipment applied under alternative arrangements (see 1.2.2.1) shall be provided by the manufacturer or installer
(4) unique maintenance procedures or unique methods required for inspection and test of equipment specified in an ASME A17.7/CSA B44.7 code compliance document (CCD)
(5) procedures for tests, periodic inspections, maintenance, replacements, adjustments, and repairs for traction-loss detection means, broken-suspension-member detection means, residual-strength detection means, and related circuits [See 2.20.8.1 through 2.20.8.3, 8.6.4.19.12, 8.6.11.11, 8.10.2.2.2(cc)(3)(c)(-2), and 8.10.2.2.2(ss).]
(6) procedures for inspections, maintenance, replacements, adjustments, and repairs for escalator\moving walk dynamic braking means (See I-15, 6.1.5.3.4)

(c) Written checkout procedures
(1) for elastomeric buffers (see 8.6.4.4.2)
(2) to demonstrate E/E/PES function as intended (see 8.6.4.19.10)
(3) for two-way communication means (see 8.6.4.19.15)
(4) for elevator leveling speed with open doors (see 8.6.4.20.8)
(5) for hydraulic elevator overspeed valve (see 8.6.5.16.5)
(6) for escalator reversal stopping device (see 8.6.8.15.7)
(7) for escalator handrail retarding force (see 8.6.8.15.13)
(8) for escalator and moving walk dynamic brake systems (see 8.6.8.15.4)

8.6.8.15.4 Drive Machine and Brake.
The drive machine and brakes shall be examined and tested, including test of the brake torque (Items 8.4 and 10.4). For escalators and moving walks utilizing dynamic braking:
(a) removal of electrical power from the driving machine motor and brake for conditions where deceleration and/or stopping distance requirements are not met shall be tested.
(b) the person or firm maintaining the equipment shall provide a written checkout procedure and demonstrate the system complies with the requirements of the Code (see 8.6.1.2.2(c)(8). This shall include, but not be limited to:
   (1) Verification that all EPD’s not permitting use of dynamic braking properly removes motor power and applies drive machine brake (see 6.1.5.3.4(c)).
   (2) Verification that loss of electrical power properly applies drive machine brake (see 6.1.5.3.4(b)).
   (3) Verification that a solid state motor drive control (VFD) error or fault properly removes motor power and applies drive machine brake including, but not limited to, errors on braking resistors and regenerative power distribution.
   (4) Verification that failure of stopping distance monitoring means properly removes motor power and applies drive machine brake (see 6.1.5.3.4(d)).
   (5) Verification that failure to achieve stopping rate to meet required stopping distance properly removes motor power and applies drive machine brake (see 6.1.5.3.4(d)).
   (6) Verification that drive machine brake is set not later than when the escalator/moving walk comes to rest (see 6.1.5.3.4(b)).
(c) the escalator dynamic brake system shall be tested manually in each escalator travel direction to determine that it functions properly. If the escalator has been continuously run in only one direction such that it may be damaged by reversal, perform the test in that direction only and note on inspection form.

SECTION 8.10 ACCEPTANCE INSPECTIONS AND TESTS

8.10.4 Acceptance Inspection and Tests of Escalators and Moving Walks

8.10.4.1.2 Internal Inspection and Tests
(d) Drive Machine and Brake. The drive machine and brakes shall be inspected and tested including a test of the brake torque and dynamic braking systems, where provided (6.1.5.3 and 6.2.5.3) (Items 8.4 and 10.4).
(1) connection of machine and driveshaft (6.1.5.1 and 6.1.5.3.2 or 6.2.5.1 and 6.2.5.3.2)
(2) drive motor (6.1.5.2 or 6.2.5.2)
(3) brake type (6.1.5.3 or 6.2.5.3)
(-a) Verify that the brake torque complies with the value shown on the data plate or in the special instructions [see 6.1.5.3.1(d) for escalators and 6.2.5.3.1(d) for moving walks].
(-b) Minimum no load stopping distance for moving walks and escalators with variable-torque brakes.
(4) brake data plate [6.1.5.3.1(d)]
(5) main driveshaft brake (6.1.5.3.2)
(6) escalator brake certification (6.1.5.3.3)
(7) escalator/moving walk dynamic braking (6.1.5.3.4 and 6.2.5.3.4)

SECTION 8.11 PERIODIC INSPECTIONS AND WITNESSING OF TESTS

8.11.4.1 Periodic Inspection and Test Requirements. Inspectors shall include the following when identifying components or systems, or both, that shall be inspected:

   (w) Escalator/Moving Walk Dynamic Braking (Item 8.4 and 10.4)

_Rationale_: These requirements have been added or revised in order to have inspection and testing requirements for dynamic braking on escalators and moving walks that has been approved for the 2019 code edition. See approved TN 12-1111.
**ESCALATOR\MOVING WALK DYNAMIC BRAKING BASIC LOGIC**

**Testing Requirement:**
Confirm that all EPO's not permitting use of dynamic braking properly removes motor power and applies drive machine brake.

1. **Testing Requirement:**
   Confirm that loss of electrical power properly applies drive machine brake.

2. **Testing Requirement:**
   Confirm that solid state motor drive control (vfb) error or fault properly removes motor power and applies drive machine brake. Includes errors in braking resistors and regenerative power distribution.

3. **Testing Requirement:**
   Confirm that failure of stopping distance monitoring means properly removes motor power and applies drive machine brake.

4. **Testing Requirement:**
   Confirm that failure to achieve stopping rate to meet required stopping distance properly removes motor power and applies drive machine brake.

5. **Testing Requirement:**
   Confirm that drive machine brake is set not later than when the escalator/moving walk comes to rest.
Record 19-172

Revise A17.1-2019 as follows:

2.17.12 Minimum Factors of Safety and Stresses of Safety Parts and Rope Connections

2.17.12.1 Parts of safeties, except springs, safety rope drums, leading sheaves, bearings, and their supporting brackets and safety-jaw gibbs, shall have a factor of safety of not less than 3.5, and the materials used shall have an elongation of not less than 15% in a length of 50 mm (2 in.) when tested in accordance with ASTM E 8. Forged, cast, or welded parts shall be stress relieved.

Rationale: ASTM E8 was never intended to address bearings.

Record 19-175

Revise A17.1-2019 as follows:

2.19.1 Ascending Car Overspeed Protection

2.19.1.1 Purpose. Ascending car overspeed protection shall be provided to prevent the car from striking the hoistway overhead structure as a result of a failure in;
   (a) the electric driving-machine motor, brake, coupling, gear-shaft, or gearing
   (b) the control system
   (c) any other component upon which the speed of the car depends, except;
      (1) the suspension ropes and the drive sheave of the traction machine.
      (2) the driving machine sheave shaft, provided that any failure of this sheave shaft does not result in ascending car overspeed.

Rationale: 1. To mirror requirement 2.19.2.1(a) as this represents the same situation.
2. To clarify the requirement, and enable safe sheave shaft design arrangements.

2.19.2.1 Purpose. Protection shall be provided with a means to detect unintended car movement (see Section 1.3) and stop the car movement, as a result of failure in any of the following:
   (a) electric driving-machine motor, brake, coupling, gear-shaft, or gearing
   (b) control system
   (c) any other component upon which the speed of the car depends, except;
      (1) the suspension ropes and the drive sheave of the traction machine.
      (2) the driving machine sheave shaft, provided that any failure of this sheave shaft does not result in ascending car overspeed.

Rationale: To clarify the requirement, and enable safe sheave shaft design arrangements.
Revise A17.1-2019 as follows:

Rationale: Revised to clarify runby requirements and properly delineate between the installation, maintenance and replacement requirements for runby.

DESIGN:

2.4.2 Minimum Bottom Runby for Counterweighted Elevators

The bottom runby of cars and counterweights when new suspension means are provided shall be not less than the requirements stated in 2.4.2.1 and 2.4.2.2.

2.4.2.1 Where oil buffers are used, the bottom runby shall be not less than 150 mm (6 in.), except that

(a) where practical difficulties prevent a sufficient pit depth or where a top clearance cannot be provided to obtain the runby specified, it shall be permitted to be reduced

(b) where spring-return-type oil buffers are used, the runby shall be permitted to be eliminated so that the buffers are compressed by amounts not exceeding those permitted by 2.22.4.8, when the car floor is level with the terminal landings.

2.4.2.2 Where spring buffers, elastomeric buffers, or solid bumpers are used, the bottom runby shall be not be less than 150 mm (6 in.), except for rheostatic and single-speed AC control, not less than shown in Table 2.4.2.2.

Table 2.4.2.2 Minimum Bottom Runby for Counterweight Elevators With Spring Buffers, Elastomeric Buffers, or Solid Bumpers and Rheostatic Control or Single-Speed AC Control

<table>
<thead>
<tr>
<th>Rated Speed, m/s (ft/min)</th>
<th>Runby, mm (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not over 0.13 (not over 25)</td>
<td>75 (3)</td>
</tr>
<tr>
<td>Over 0.13 to 0.25 (over 25 to 50)</td>
<td>150 (6)</td>
</tr>
<tr>
<td>Over 0.25 to 0.50 (over 50 to 100)</td>
<td>225 (9)</td>
</tr>
<tr>
<td>Over 0.50 to 1.0 (over 100 to 200)</td>
<td>300 (12)</td>
</tr>
</tbody>
</table>

Rationale: Clarify runby requirements based on buffer type(s). Remove table 2.4.2.2 for new elevators since Single speed AC control and Rheostatic Control do not meet 2.26.11, A117.1 and ADDAG. The table has been moved to 8.6.3.12.1.

2.22.4.8 Compression of Buffers When Car Is Level With Terminal Landings. Car and counterweight oil buffers of the mechanical spring-return type shall be permitted to be compressed not to exceed 25% of their stroke when the car is level with the terminal landings (see 2.4.2.1(b)).

Rationale: Update cross reference for revised proposal.
8.6.3.12 Runby and Clearances After Suspension Means are Replaced Reroping or Shortening.

8.6.3.12.1 When new suspension means are installed, the minimum top-of-car and top-of-counterweight clearances specified in 2.4.76 and 2.4.89 shall apply and the minimum car and counterweight runby specified in 2.4.2 shall apply. For rheostatic and single speed AC control the runby shall not be less than shown in Table 8.6.3.12.1, be maintained when new suspension means are installed or when existing suspension means are shortened. The minimum clearances shall be maintained by any of the methods, or a combination of methods described in (a) through (c), may be used to satisfy these clearance requirements. 8.6.3.12.1 through 8.6.3.12.4 (see 8.6.4.11).

8.6.3.12.1 (a) Adjust the length that the suspension means are shortened.

8.6.3.12.2 (b) Provide blocking at the car or counterweight strike plate. The blocking shall be of sufficient strength and secured in place to withstand the reactions of buffer engagement as specified in 8.2.3. If wood blocks are used to directly engage the buffer, a steel plate shall be fastened to the engaging surface or shall be located between that block and the next block to distribute the load upon buffer engagements.

8.6.3.12.3 (c) Provide blocking under the car or counterweight buffer or both of sufficient strength and secured in place to withstand the reactions of buffer engagement as described in 8.2.3.

8.6.3.12.4 Provide the month and year the suspension means were first shortened. Appropriate data shall be recorded on the data tag (see 2.20.2.2.2).

Note: See 2.20.2.2.2(m) and 8.6.4.11.3 when suspension means are first shortened.

Table 8.6.3.12.1 Minimum Bottom Runby for Counterweight Elevators With Spring Buffers, Elastomeric Buffers, or Solid Bumpers and Rheostatic Control or Single-Speed AC Control

<table>
<thead>
<tr>
<th>Rated Speed, m/s (ft/min)</th>
<th>Runby, mm (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not over 0.13 (not over 25)</td>
<td>75 (3)</td>
</tr>
<tr>
<td>Over 0.13 to 0.25 (over 25 to 50)</td>
<td>150 (6)</td>
</tr>
<tr>
<td>Over 0.25 to 0.50 (over 50 to 100)</td>
<td>225 (9)</td>
</tr>
<tr>
<td>Over 0.50 to 1.0 (over 100 to 200)</td>
<td>300 (12)</td>
</tr>
</tbody>
</table>

Rationale: Correct a reference that was not updated when this section was renumbered for the A17.1b-2009 code.
Clarify the methods or combination of methods that may be used for maintaining the required clearances.
Move requirements to shorten and to track the first shortening of suspension means into the maintenance section and replace with a note.
MAINTENANCE:

8.6.4.11 Runby

8.6.4.11.1 The car and counterweight runby shall be maintained to ensure permitted to be reduced (see 2.4.2), provided the car or counterweight does not strike the buffer, the top car clearances are not reduced below that required at the time of installation or alteration, and the final terminal stopping device shall remain operational (see also 8.6.3.3.3).

8.6.4.11.2 Where spring-return oil buffers are provided and compression was permitted with the car at the terminals (see 2.4.2 and 2.22.4.8), the buffer compression shall not exceed 25% of the buffer stroke. The runby specified in:

(a) 2.4.2.1(a) and 2.4.2.2 shall be permitted to be eliminated.

(b) 2.4.2.1(b) for spring return oil buffers shall be maintained to not exceed the 25% compression of the buffer stroke with the car level with the terminal landings.

8.6.4.11.3 When suspension means are first shortened, the required information shall be recorded on the data tag (see 2.20.2.2.2(m)).

Rationale: Utilize requirement 8.6.4.11.1 to ensure sufficient car top clearance. Utilize requirement 8.6.4.11.2 to ensure runby values. Provide a cross reference that shortening of suspension means must be recorded/dated.
Record 19-1027

Revise A17.1-2019 as follows:

8.6.1.4.1 On-Site Maintenance Records

…

(d) Permanent Record. A permanent record of the results of all acceptance tests as required by 8.10.1.1.4 and 8.10.1.1.5 shall be kept with the on-site records.

Test tags, complying with 2.16.3.3 8.13.3 for marking plates (except lettering shall be 1.6 mm [0.0625 in.]), permanently attached to or adjacent to the controller, shall meet this requirement.

Rationale: The reference in 8.6.1.4.1(d) is to test tags complying with 2.16.3.3 for ‘marking plates’. With the changes for A17.1-2019, this reference in 2.16.3.3 is to 8.13.1 (Permanent Plates), which is not correct. The correct reference is to 8.13.3 for Marking Plates; as was the reference in previous editions.
**Record 19-1327**

*Proposed Revision to A17.1, Appendix X Door Monitoring System:*

**NONMANDATORY APPENDIX X**

**ACCEPTANCE TESTS**

**Table X-1 Acceptance Test for Electric Elevators**

**Acceptance Test: Electric Elevators**

Name of Person Performing Test (Print):

Name and License Number/Certifying Organization of Inspector (Print):

Name of Firm Performing Test:

<table>
<thead>
<tr>
<th>Devices Tested/Test Requirement</th>
<th>Date</th>
<th>Results of Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Door Closing Force — 8.10.2.2.1(h)</td>
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Table X-2 Acceptance Test for Hydraulic Elevators
Acceptance Test: Hydraulic Elevators

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<td>29 Car Leveling and Anticreep Operation — 8.10.3.2.3(g)</td>
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**Rationale:** to add Door Monitoring Systems to the lists and renumber accordingly.
Record 19-1337

Proposed Revision to A17.1, Requirements 8.6.1.2.2(c)(3) and 8.6.5.14.3 Category 1 for Communication Devices:

8.6.1.2.2(c)(3) for two-way communication means (see 8.6.4.19.15, 8.5.14.3(l))

8.6.5.14.3 Additional Tests. The following tests shall also be performed:

(a) Normal Terminal Stopping Devices (8.6.4.19.5) (Item 3.5.2)
(b) Governors (8.6.4.19.3) (Item 2.13.2.2)
(c) Safeties (8.6.4.19.2) (Item 5.8.2)
(d) Oil Buffers (8.6.4.19.1) (Item 5.12)
(e) Firefighters’ Emergency Operation (8.6.4.19.6) (Items 6.1 through 6.5, as applicable)
(f) Standby or Emergency Power Operation (8.6.4.19.7) (Item 1.17.2.2)

NOTE: Absorption of regenerated power (2.26.10) does not apply to hydraulic elevators.

(g) Power Operations of Door System (8.6.4.19.8) (Items 4.6 and 4.7)
(h) Emergency Terminal Speed-Limiting Device and Emergency Terminal Stopping Device (3.25.2) (Item 3.6.2.2)
(i) Low Oil Protection Operation (3.26.9) (Item 2.39.2)
(j) Auxiliary Power Lowering Device. The auxiliary power lowering device, where provided, shall be tested with no load in the car for conformance with applicable requirements (3.26.10) (Item 2.44).

(k) Occupant Evacuation Operation. Occupant Evacuation Operation shall be tested to determine conformance with the applicable requirements. Deficiencies shall be corrected. A record of findings shall be available to the building owner and the authority having jurisdiction (3.27, 2.27.11) (A17.2 Nonmandatory Appendix I).

(l) Emergency Communications. Emergency communications shall be tested to determine conformance with the applicable requirements (8.6.1.2.2(c)(3)) (Item 1.6). A written checkout procedure shall be provided (check on-site documentation, see 8.6.1.2.2).

(m) Means to Restrict Hoistway or Car Door Opening. Means to restrict hoistway or car door opening shall be tested to determine conformance with the applicable requirements (3.14, 2.14.5.7) (Item 1.18).

Rationale: A17.1-2016/B44-16 added requirement for testing OEO, emergency communication and hoistway/car door opening restriction (8.6.4.19.15). These applied to electric elevators, but not hydraulic. This proposal adds the same requirements to hydros.
Proposed Revision to A17.1, Requirement 8.6.5.14.3(g) and 8.6.5.14.6 Power Operation of Door System:

8.6.5.14.3 Additional Tests. The following tests shall also be performed:
(a) Normal Terminal Stopping Devices (8.6.4.19.5) (Item 3.5.2)
(b) Governors (8.6.4.19.3) (Item 2.13.2.2)
(c) Safeties (8.6.4.19.2) (Item 5.8.2)
(d) Oil Buffers (8.6.4.19.1) (Item 5.12)
(e) Firefighters’ Emergency Operation (8.6.4.19.6) (Items 6.1 through 6.5, as applicable)
(f) Standby or Emergency Power Operation (8.6.4.19.7) (Item 1.17.2.2)
(g) Power Operations of Door System (8.6.4.19.8) (Items 4.6 and 4.7)
(h) Emergency Terminal Speed-Limiting Device and Emergency Terminal Stopping Device (3.25.2) (Item 3.6.2.2)
(i) Low Oil Protection Operation (3.25.9) (Item 2.39.2)

...
Record 19-1354

Revise A17.1-2019 as follows:

5.9.XX Elevators Under Construction or Disassembly

Partially assembled elevators not complying with all the requirements of Section 5.9 shall not be placed in service and used to transport passengers or materials, with the exception of use by elevator personnel.

Rationale: Elevators not complying with Section 5.9 are not safe for use by miners.

Record 19-1763

8.6.1.2.2 On-Site Documentation. The following documents specified in (a) through (e) (f) shall be written and permanently kept on-site in the machine room, machinery space, control room, control space, or in the means necessary for test (2.7.6.4) in hard copy for each unit for elevator personnel.

The documentation specified in (d) shall be on-site and available to the specified personnel.

(e) USI(s) of the executable software associated with the relevant functions in 2.26.1.7.1 and 3.26.11.1 (see also 2.26.1.7.3).

(f) The documentation for the engineering test of skirt panels deflection for units installed or altered under A17.1-2011 and later editions (see 8.3.15.5)

Rationale:

1) To clarify that the personnel for which the Unique Software Identifier documentation is intended is elevator personnel and to provide the correct reference to the on-site documentation. See Record 09-872.

2) To provide the correct reference to the required documentation for the engineering test of skirt panel deflection in the on-site documentation. See Record 16-1623
Record 19-2498

Revise A17.1-2019 as follows:

8.6.8.15 Periodic Test Requirements — Category 1

... 8.6.8.15.24 Maintenance of Seismic Devices. A seismic detection device, where provided, shall be maintained in accordance with the manufacturer’s recommendations.

Rationale: Requirement 8.6.8.15 is for Category 1 testing of the escalators and moving walks while 8.6.8.15.24 is a maintenance item. It is suggested the paragraph be moved away from the Category 1 procedures to avoid confusion.

Record 20-160

Proposed Revision to A17.1, Requirement 8.6.4.6.3 Testing Requirements of Emergency Brake when Replacing Parts:

8.6.4.6.3 If any part of the emergency brake is changed or adjusted that can affect the holding capacity or decelerating capacity of the emergency brake when required (see 2.19.3), it shall be adjusted and checked by means that will verify its proper function and holding capacity. A test complying with 8.6.4.20.11 shall be performed.

Rationale: Add the appropriate cross-reference to the applicable testing requirement mirroring Driving Machine Brake 8.6.4.6.2. Note that TN 15-397 adds alternative testing for the emergency brake.

Record 20-174

Proposed Revision to A17.1-2019/CSA B44-19:

2.27.10.1 Fire Service Access Elevators. In jurisdictions not enforcing the NBCC, fire service access elevators shall be provided when required by the building code, and shall:

(a) provide control signal(s) shall be provided to the building system for lighting the hoistway when Firefighters’ Emergency Operation is active.

(b) be identified as fire service access elevator(s) in accordance with the requirements of the building code.

Rationale: Editorially modified to provide guidance for identifying fire service access elevators.
Record 20-272

Revise A17.1-2019 as follows:

8.6.7.9.X Rack and pinion elevators shall be removed from service when the rack or gear teeth are damaged, missing, or the wear exceeds the manufacturers service limit.

Rationale: Establish retirement criteria for rack and pinion mine elevators.
SECTION 3.27
EMERGENCY OPERATION AND SIGNALING DEVICES
Emergency operation and signaling devices shall conform to 2.27, except as modified by the following:

(a) In requirement 2.27.2.4.4 (a) replace the wording with the following: “An elevator that is not on designated attendant operation, hoistway access operation, inspection operation, Firefighters’ Phase I Emergency Recall Operation, or Firefighters’ Phase II In-Car Emergency Operation shall return to the designated level where the power operated doors at the landing where the illuminated signal (see 2.27.2.3) is located shall open. Where more than one entrance is provided at the designated level, the other doors are permitted to open and, when open, automatic closing shall be initiated within 15 s. When the selected elevator is at the designated level or fails to move within 30 s, the selection shall be automatically transferred to another elevator. The door open button(s) shall be operative and when released, automatic closing shall be initiated within 15 s. If the doors are open when the selection means selects another elevator, automatic closing shall be initiated within 15 s.”

(b) In requirement 2.27.2.4.4(c) replaced the wording with the following: “An elevator that is on Firefighters’ Phase I Emergency Recall Operation shall return to the recall level in accordance with 2.27.3.1 or 2.27.3.2 and upon arrival, automatic power doors shall open. Once recall is complete, or the selected elevator fails to move within 30 s, the selection shall be automatically transferred to another elevator. The door open button(s) shall be operative and when released, automatic closing shall be initiated within 15 s. When selected and at the recall level, the door shall open in accordance with 2.27.3.1 or 2.27.3.2. If the doors(s) are open when the selection means selects another elevator, automatic closing shall be initiated within 15 s.”

(c) The requirements of 3.26.9 and 3.18.2.7 shall be modified when Phase I Emergency Recall Operation and Phase II Emergency In-Car Operation are in effect, as specified in 3.27.1 through 3.27.4.

(d) The requirements of 2.27.3.2.1(b) and 2.27.3.2.2(b) shall be modified to include a machinery space containing a hydraulic machine.

3.27.1 Phase I Emergency Recall Operation After Device Actuation
If Phase I Emergency Recall Operation is activated while the elevator is responding to any of the following devices, the car shall return to the recall level:

(a) low oil protection (see 3.26.9)
(b) plunger-follower guide protection, provided the car is capable of being moved (see 3.18.2.7)
(c) auxiliary power lowering (see 3.26.10)
(d) oil tank temperature shutdown (see 3.26.6.5)

If the elevator is incapable of returning to the recall level, the car shall descend to an available floor. Upon arrival, automatic power-operated doors shall open, and then...
reclose when open, automatic closing shall be initiated within 15 s. The door open button(s) shall remain operative and, when released, automatic closing shall be initiated within 15 s. The visual signal [2.27.3.1.6(h)] shall extinguish.

3.27.2 Phase I Emergency Recall Operation Prior to Device Actuation

(a) If any of the devices specified in 3.27.1(a) through 3.27.1(d) is activated while Phase I Emergency Recall Operation is in effect but before the car reaches the recall level, the car shall do one of the following:

(1) If the car is above the recall level, it shall complete Phase I Emergency Recall Operation.

(2) If the car is below the recall level, it shall descend to an available floor.

(b) Upon arrival, automatic power-operated doors shall open, and then reclose when open, automatic closing shall be initiated within 15 s. The door open button(s) shall remain operative and, when released, automatic closing shall be initiated within 15 s. The visual signal [see Fig. 2.27.3.1.6(h)] shall extinguish.

3.27.3 Device Actuation at Recall Level

If any of the devices specified in 3.27.1(a), 3.27.1(c), or 3.27.1(d) is activated while the car is stationary at the recall level and Phase I Emergency Recall Operation is in effect, the following shall apply:

(a) Automatic power-operated doors shall close initiate closing within 15 s.

(b) The door open button(s) shall remain operational operative and, when released, automatic closing shall be initiated within 15 s.

(c) The visual signal [see Fig. 2.27.3.1.6(h)] shall illuminate intermittently.

**Rationale:** Requirement 3.26.3.1.4 permits the anticreep operation, depending upon the availability of the electric power supply to move the elevator. When the normal power fails and emergency or standby power system is not capable of moving all elevators simultaneously, the power is available to all elevators for door operation but the selection to run is transferred between elevators. When a hydraulic elevator is unselected to run, anticreep operation will not function therefore the doors are to automatically close when the elevator is not selected to run.

Because power is available to all cars, the door open button is required to be operative should someone enter an elevator just prior to being unselected. When the elevator is not selected to run, the door open button is used to exit the elevator and the doors are required to automatically close when the button is released after a short period of time to allow the passenger to exit.

If an elevator fails to run for 30 seconds for any reason the selection to run is transferred to another elevator to minimize the delay of evacuating trapped passengers in other elevators. The doors are required to be open when selected or reopen if reselected when at the fire recall level to allow firefighters access for Phase II operation.
Proposed revisions to A17.1-2019/CSA B44:19

2.27.3.4 Interruption of Power. The failure and subsequent restoration of electrical power (normal, emergency, or standby) shall not cause any elevator to be removed from Phase I Emergency Operation or Phase II Emergency In-Car Operation.

   (b) Elevators on Phase II Emergency In-Car Operation with the key in the “OFF” position shall be permitted to move only to the next floor in the direction of the recall level to reestablish absolute car position prior to conforming to 2.27.3.3.3 and 2.27.3.3.4. If the key is moved to the “ON” or “HOLD” position before the doors are fully closed, (c) or (d) shall apply, and automatic power-operated doors shall open if in a leveling zone.

   (c) Elevators on Phase II Emergency In-Car Operation with the key in the “HOLD” position shall not move, except for leveling within a leveling zone. If the car is in an unlocking zone, automatic power-operated doors shall open, if the doors are not fully closed and the car is in a leveling zone. The elevator shall then conform to 2.27.3.3.2.

   (d) Elevators on Phase II Emergency In-Car Operation with the key in the “ON” position shall not move, except for leveling within a leveling zone, until a car call is entered. Automatic power-operated doors shall not move under power until a door open or door close button is pressed, after which they shall conform to 2.27.3.3.1(d) and 2.27.3.3.1(e). After a car call is entered, the car shall be permitted to move only to the next floor in the direction of the recall level to reestablish absolute car position prior to answering car calls.

Rationale:
For the car doors to remain open when power is removed requires the mechanical resistance of the door operator and/or car doors to overcome the closing force of the mechanical door closers used to comply with requirement 2.11.3.1 “Closing of Hoistway Doors”. Modern door operators are designed for minimal wear therefore provide little mechanical resistive force. The door closers can in certain cases mechanically fully close both the car and hoistway doors when power is removed. This change restores control of the car to the firefighter should this occur. To clarify that once the car recovers on “HOLD” operation it shall conform to the requirements of 2.27.3.3.2.
Record 20-1143

Proposed revisions to A17.1-2019/CSA B44:19

2.27.3.2.6 When Phase I Emergency Recall Operation is initiated by a fire alarm initiating device for any of the following locations, as required by 2.27.3.2.3 or 2.27.3.2.4, the visual signal [see 2.27.3.1.6(h) and Figure 2.27.3.1.6] shall illuminate intermittently only in a car(s) with equipment in that location:

(a) machine room
(b) machinery space containing a motor controller or driving machine
(c) control room
(d) control space
(e) hoistway

If the fire alarm system that includes the FAIDs in (a) through (e) is reset, the visual signal [see 2.27.3.1.6(h)] shall not change from illuminating intermittently to illuminating continuously.

Rationale:
For automatic elevators, to require that the visual signal must not change from intermittent illumination to continuous illumination until the FIRE RECALL switch is turned to reset. To ensure that the change in the status of the visual signal does not change with the change in status of the FAID. The intent of the flashing indicator was to let firefighters know that the Phase I recall was initiated from a location where there is elevator equipment and the elevator equipment may be compromised.

2.27.4 Firefighters’ Emergency Operation: Nonautomatic Elevators

... 2.27.4.2 Phase I Emergency Recall Operation by Fire Alarm Initiating Devices

(a) Fire alarm initiating devices shall be installed, in the locations listed in (1) through (3), in compliance with the requirements in NFPA 72 or the NBCC, whichever is applicable (see Part 9), as follows:

(1) at each elevator lobby served by the elevator
(2) in the associated elevator machine room, machinery space containing a motor controller or driving machine, control space, or control room
(3) in the elevator hoistway, when sprinklers are located in those hoistways

... 2.27.4.2 Phase I Emergency Recall Operation by Fire Alarm Initiating Devices

(d) When a fire alarm initiating device in a location specified by (a)(2) or (a)(3) initiates Phase I Emergency Recall Operation as required by 2.27.3.2.3 or 2.27.3.2.4, the visual signal [see 2.27.3.1.6(h) and Figure 2.27.3.1.6] shall illuminate intermittently only in a car(s) with equipment in that location. If the fire alarm system that includes the FAIDs in (a)(2) or (a)(3) is reset, the visual signal [see 2.27.3.1.6(h)] shall not change from illuminating intermittently to illuminating continuously.

Rationale:
For non-automatic elevators, to require that the visual signal must not change from intermittent illumination to continuous illumination until the FIRE RECALL switch is turned to reset. To ensure that the change in the status of the visual signal does not change with the change in status of the FAID. The intent of the flashing indicator was to let firefighters know that the Phase I recall was initiated from a location where there is elevator equipment and the elevator equipment may be compromised.
Record 20-1180

Revise A17.1-2019 as follows:

8.6.1.6.5 Fire Extinguishers. In jurisdictions not enforcing the NBCC, Class ABC fire extinguishers shall be provided in elevator electrical machine rooms, control rooms, and control spaces outside the hoistway intended for full bodily entry, and walk-in machinery and control rooms for escalators and moving walks; and they shall be located convenient to the access door.

Rationale: To provide the same level of protection for elevator personnel regardless of the jurisdiction if a fire extinguisher is required.
Record 20-1184

Revise A17.1-2019 as follows:

8.6.1.2.2 On-Site Documentation. The documents specified in (a) through (eg) shall be written and permanently kept on-site in the machine room, machinery space, control room, control space, or in the means necessary for test (2.7.6.4) in hard copy for each unit for elevator personnel.

The documentation specified in (d) shall be on-site and available to the specified personnel.

(a) Up-to-date wiring diagrams detailing circuits of all electrical protective devices (see 2.26.2) and critical operating circuits (see 2.26.3)

(b) Procedures for inspections and tests not described in ASME A17.2 and

(c) Procedures or methods required for elevator personnel to perform maintenance, repairs, replacements, and adjustments, as follows:

1. All procedures specifically identified in the Code as required to be written (e.g., 8.6.4.20.8, checkout procedure for leveling; 8.6.5.16.5, checkout procedure for overspeed valve; and 8.6.8.15.7, checkout procedure for reversal stop switch)

2. Unique maintenance procedures or methods required for inspection, tests, and replacement of SIL rated E/E/PES electrical protective devices and circuits [See 2.26.4.3.2(b), 2.26.4.9.3.2(b), 2.26.9.5.1(b), and 2.26.9.6.1(b), and 8.6.5.14.10]

3. Unique maintenance procedures or methods required for inspection, tests, and replacement of equipment applied under alternative arrangements (see 1.2.2.1) shall be provided by the manufacturer or installer

4. Unique maintenance procedures or unique methods required for inspection and test of equipment specified in an ASME A17.7/CSA B44.7 code compliance document (CCD)

5. Procedures for tests, periodic inspections, maintenance, replacements, adjustments, and repairs for traction-loss detection means, broken-suspension-member detection means, residual-strength detection means, and related circuits [See 2.20.8.1 through 2.20.8.3, 8.6.4.19.12, 8.6.11.11, 8.10.2.2.2(cc)(-c)(-2), and 8.10.2.2.2(ss).]

(de) All checkout procedures specifically identified in the Code as required to be written:

Written checkout procedures

1. For elastomeric buffers (see 8.6.4.4.2)

2. To demonstrate E/E/PES function as intended (see 8.6.4.19.10)

3. For two-way communication means (see 8.6.4.19.15)

4. For elevator leveling speed with open doors (see 8.6.4.20.8)

5. For escalator drive machine and brake-hydraulic elevator overspeed valve (see 8.6.5.16.5)

6. For escalator reversal stopping device (see 8.6.8.15.7)

7. For escalator handrail retarding force (see 8.6.8.15.13)

(ed) All procedures specifically identified in the Code as required to be written:

Written procedures for the following:

1. Evacuation procedures for elevators by authorized persons and emergency personnel shall be available on-site (see 8.6.11.5.2 and ASME A17.4)

2. The procedure for cleaning of a car and hoistway transparent enclosures by authorized persons (see 8.6.11.4.2)

3. For see hydraulic plunger gripper (see 8.6.5.16.4)

4. For hydraulic elevator overspeed valve (see 8.6.5.16.5)
USI(s) of the executable software associated with the relevant functions in 2.26.1.7.1 and 3.26.11.1 (see also 2.26.1.7.3).

The documentation for the engineering test of skirt panels deflection for units installed or altered under A17.1-2019 and later editions (see 8.3.15.5).

Rationale: To clarify the requirement for written procedures for inspection and test not described in A17.2 in addition to the four (4) specific required items. To remove duplicate language and add clarity on the written checkout and written procedure requirements that the Code has. Add new written checkout procedures identified for A17.1-2019. Appropriately move requirements for written procedures in the correct section.

2.20.8.1 Protection Against Traction Loss. All electric traction elevators shall be provided with a traction-loss detection means to detect loss of traction between suspension members and the drive sheave [see 8.6.1.2.2(b)(5)(c)(4)]. This means shall

- (d) once actuated by traction loss, comply with the following:
  - (1) The traction-loss detection means shall remain actuated until it is manually reset.
  - (2) The car shall not start or run unless the traction loss detection means is manually reset [see 8.6.1.2.2(b)(5)(c)(4) and 8.6.11.11].

- (f) be included in the on-site documentation [see 8.6.1.2.2(b)(5)(c)(4)] with sufficient detail to ensure that testing can be accomplished by elevator personnel.

Rationale: To update the references.

2.20.8.2 Broken Suspension Member.

- (c) be arranged to be tested in accordance with the requirements in 8.10.2.2.2(ss)(1), and instructions for testing shall be included in the on-site documentation [see 8.6.1.2.2(b)(5)(c)(4)] with sufficient detail to ensure that testing can be accomplished by elevator personnel.

Rationale: To update the references.

2.20.8.3 Suspension Member Residual Strength

- (c) be arranged to be tested in accordance with the requirements in 8.10.2.2.2(ss)(2), and instructions for testing shall be included in the on-site documentation [see 8.6.1.2.2(b)(5)(c)(4)] with sufficient detail to ensure that testing can be accomplished by elevator personnel.

Rationale: To update the references.

8.6.4.19.12 Traction-Loss Detection Means. Where provided, conformance with the traction-loss detection means specified in 2.20.8.1 shall be demonstrated by either of the following:
(a) causing relative motion between the drive sheave and the suspension means by bottoming the car or counterweight [see 8.6.4.20.10(b)]

(b) an alternative test provided in the on-site documentation [see 8.6.1.2.2(b)(5)(c)(4)]

Rationale: To update the references.

8.6.4.19.20 Testing of Alternative Arrangements and ASME A17.7/CSA B44.7–Conforming Equipment. As required by the manufacturer and/or an ASME A17.7/CSA B44.7 Code Compliance Document (CCD), tests shall be performed

(a) on equipment applied under alternative arrangements [see 8.6.1.2.2(b)(3)(c)(2)]

(b) on equipment specified in an ASME A17.7/CSA B44.7 CCD [see 8.6.1.2.2(b)(3)(c)(3)]

Rationale: To update the references.

8.6.5.14.9 Testing of Alternative Arrangements and ASME A17.7/CSA B44.7–Conforming Equipment. As required by the manufacturer and/or an ASME A17.7/CSA B44.7 CCD, tests shall be performed

(a) on equipment applied under alternative arrangements [see 8.6.1.2.2(b)(3)(c)(2)]

(b) on equipment specified in an ASME A17.7/CSA B44.7 CCD [see 8.6.1.2.2(b)(3)(c)(3)]

Rationale: To update the references.

8.6.5.16.4 A plunger gripper, where provided, shall be examined and tested per 8.10.3.2.5(n) (Item 5.17.2). The periodic test record shall be completed. The person or firm installing or maintaining the equipment shall provide a written procedure in the on-site documentation [see 8.6.1.2.2(b)(4)(e)(3)] and demonstrate that the plunger gripper shall function as required by 3.17.3

Rationale: To update the references.

8.6.8.15.26 Testing of Alternative Arrangements and ASME A17.7/CSA B44.7–Conforming Equipment. As required by the manufacturer and/or an ASME A17.7/CSA B44.7 CCD, tests shall be performed

(a) on equipment applied under alternative arrangements [see 8.6.1.2.2(b)(3)(c)(2)]

(b) on equipment specified in an ASME A17.7/CSA B44.7 CCD [see 8.6.1.2.2(b)(3)(c)(3)]

Rationale: To update the references.

8.6.11.10.3 Alternative Test Method Procedure. The alternative test method shall

(e) include the information required by 8.6.1.2.2(b)(5)(c)(2) where applicable

Rationale: To update the references.
8.6.11.11 Examination After Shutdown Due to Traction Loss. Where the traction-loss detection means has been actuated [see 2.20.8.1 and 8.6.1.2.2(b)(5)(c)(4)], the elevator shall not be returned to service until a physical examination of the drive sheave and suspension means has been conducted. The elevator shall not be moved until all passengers are out of the elevator and the elevator is posted out-of-service. In addition to the suspension means evaluation criteria in 8.11.2.1.3(cc), any suspension-means or drive-sheave condition that would adversely affect the traction capability of the system (see 2.24.2.3) shall be corrected before returning the elevator to service.

Rationale: To update the references.

8.7.1.10 Executable Software Verification and Witness Test. Where executable software for functions listed in 2.26.1.7.1 or 3.26.11.1 is changed as part of an alteration, the software changed shall have a new USI that shall be logged in the on-site documentation [8.6.1.2.2(e)(f)].

Rationale: To update the references.

8.10.1.5 Unique or Product-Specific Procedures or Methods. Where unique or product-specific procedures or methods are required to maintain, repair, replace, inspect, or test equipment, such procedures or methods shall be provided by the manufacturer or installer [see 8.6.1.2.2(b) and 8.6.1.2.2(c)].

Rationale: To update the references.

8.10.2.2.1 Inside the Car

... (j) Power Opening of Doors or Gates (Item 1.10)

1) Power Opening of Doors (2.13.2). Determine that power opening of car and hoistway doors only occurs when the car is at rest at the landing or in the landing zone, except in the case of static control, check that the power shall not be applied until the car is within 300 mm (12 in.) of the landing.

2) Leveling Zone (2.26.1.6.3) and Leveling Speed (2.26.1.6.6). Check that the leveling zone does not exceed the maximum allowable distance. Check that the leveling speed does not exceed 0.75 m/s (150 ft/min). In addition, for static control elevators, the person or firm installing the equipment shall provide a written checkout procedure and demonstrate that the leveling speed with the doors open is limited to a maximum of 0.75 m/s (150 ft/min) and that the speed-limiting (or speed monitor) means is independent of the normal means of controlling this speed (2.26.1.6.6).

The written checkout procedure shall be left on site as part of the on-site documentation (see 8.6.1.2.2(d)(4)).

Rationale: To add the requirement that written checkout procedures are required to be part of the on-site documentation and are to be left on the job site after their use for turnover testing.

8.10.2.2.2 Machine Rooms, Machinery Spaces, and Control Rooms/Space
(c) Conformance with the traction-loss detection means specified in 2.20.8.1 shall be demonstrated by either

(-1) causing relative motion between the drive sheave and suspension means by bottoming either the car or the counterweight [see (-b)]

(-2) an alternative test provided in the on-site documentation [see 8.6.1.2.2(b)(5)(c)(4)] or by the installer and acceptable to the authority having jurisdiction

Rationale: To update the references

8.10.2.2.8 Functional Safety of SIL Rated Device(s). Where an installation or alteration contains SIL rated devices, verify the Code data plate is marked (see Section 8.9) and that SIL rated devices used to satisfy 2.26.4.3.2, 2.26.8.2, 2.26.9.3.2(b), 2.26.9.5.1(b), and 2.26.9.6.1(b) are identifiable on wiring diagrams (see 8.6.1.6.3) with part identification, certification identification information, and an SIL equal to or greater than the values indicated for the devices in Table 2.26.4.3.2, and 2.26.8.2 and 2.26.9, as applicable. The person or firm installing the equipment shall provide a written checkout procedure and shall demonstrate that SIL rated devices, safety functions (see Table 2.26.4.3.2), and related circuits operate as intended.

The written checkout procedure shall be left on site as part of the on-site documentation (see 8.6.1.2.2(e)(1)).

Rationale: To add the requirement that written checkout procedures are required to be part of the on-site documentation and are to be left on the job site after their use for turnover testing

8.10.3.2.4 Outside Hoistway

... (n) A plunger gripper, where provided, shall be inspected and tested at rated load at not less than operating speed in the down direction. The means for the actuation of the gripper shall be verified by overspeeding the car or by alternative means. Where multiple means of actuation are provided, each means shall be individual tested. The date of this test shall be permanently marked on the plunger gripper marking plate and recorded in the acceptance test records (see 3.17.3.8 and 8.10.1.1.4) (Item 5.17.3). The person or firm installing or maintaining the equipment shall provide a written procedure in the on-site documentation [see 8.6.1.2.2(b)(4)(e)(3)] and demonstrate that the plunger gripper shall function as required by 3.17.3.

The written procedure shall be left on site as part of the on-site documentation (see 8.6.1.2.2(e)(3)).

(o) Overspeed Valve and Seal. Overspeed valves, where provided, shall be inspected and tested to verify that they will stop the car, traveling down with rated load within the specified limits of 3.19.4.7.5(a), using a written procedure supplied by the valve manufacturer or installer (Item 5.15.3.2).

The written procedure shall be left on site as part of the on-site documentation (see 8.6.1.2.2(e)(4)).

Rationale: To add the requirement that written procedures are required to be part of the on-site documentation and are to be left on the job site after their use for turnover testing.

Update Code requirement references.
8.10.3.2.5 Pit

... (n) A plunger gripper, where provided, shall be inspected and tested at rated load at not less than operating speed in the down direction. The means for the actuation of the gripper shall be verified by overspeeding the car or by alternative means. Where multiple means of actuation are provided, each means shall be individually tested. The date of this test shall be permanently marked on the plunger gripper marking plate and recorded in the acceptance test records (see 3.17.3.8 and 8.10.1.1.4) (Item 5.17.3). The person or firm installing or maintaining the equipment shall provide a written procedure in the on-site documentation [see 8.6.1.2.2(b)(d)(e)(3)] and demonstrate that the plunger gripper shall function as required by 3.17.3.

The written procedure shall be left on site as part of the on-site documentation (see 8.6.1.2.2(e)(3)).

(o) Overspeed Valve and Seal. Overspeed valves, where provided, shall be inspected and tested to verify that they will stop the car, traveling down with rated load within the specified limits of 3.19.4.7.5(a), using a written procedure supplied by the valve manufacturer or installer (Item 5.15.3.2).

The written procedure shall be left on site as part of the on-site documentation (see 8.6.1.2.2(c)(4)).

Rationale: To add the requirement that written procedures are required to be part of the on-site documentation and are to be left on the job site after their use for turnover testing.

Update Code requirement references.

8.10.4.1.1 External Inspection and Tests

... (c) Handrails (Items 7.3 and 9.3)

(1) Speed (6.1.3.4.1 or 6.2.3.4.1). Running tests shall be performed, in each direction, to determine conformance with 6.1.3.4.1 or 6.2.3.4.1.

(2) extension (6.1.3.4.2 or 6.2.3.4.2)

(3) guards (6.1.3.4.3 or 6.2.3.4.3)

(4) splice (6.1.3.4.4 or 6.2.3.4.4)

(5) height (6.1.3.4.5)

(6) clearance (6.1.3.4.6 or 6.2.3.4.5)

(7) the person or firm installing the equipment shall provide a written checkout procedure and demonstrate that the handrail speed does not change when a retarding force, up to the maximum required by the Code, is applied opposite to the direction of travel (6.1.3.4.1 or 6.2.3.4.1)

The written checkout procedure shall be left on site as part of the on-site documentation (see 8.6.1.2.2(d)(7).

... (g) Reversal Stop Switch. The reversal stop switch (to prevent reversal when operating in the ascending direction) shall be tested by manually operating it to determine that it functions properly (6.1.6.3.8 or 6.2.6.3.7 and 6.2.6.3.8) (Items 8.7 and 10.7).

If the device cannot be manually operated, the person or firm installing the equipment shall provide a written checkout procedure and demonstrate the device complies with 6.1.6.3.8 or 6.2.6.3.7.
The written checkout procedure shall be left on site as part of the on-site documentation (see 8.6.1.2.2(d)(6)).

(p) Skirt Panels (Items 7.17 and 9.17)
   (1) clearance between skirt and steps [6.1.3.3.5 or 6.2.3.3.5(a), and 6.2.3.3.6(a)]
   (2) height above step [6.1.3.3.6(a) or 6.2.3.3.5(b), and 6.2.3.3.6(b)]
   (3) deflection [6.1.3.3.6(b) or 6.2.3.3.6(c)]. The person or firm installing the equipment shall provide engineering test documentation [see 8.3(b)(7) and 8.3.15] to be left in the on-site documentation (see 8.6.1.2.2(g)) to verify conformance with the deflection requirements of not more than 1.6 mm (0.0625 in.) under a force of 667 N (150 lb).

Rationale: To add the requirement that written checkout procedures and engineering test documentation be part of the on-site documentation and are to be left on the job site after their use for turnover testing.

Update Code requirement references.

8.11.1.7 Unique or Product-Specific Procedures or Methods. Where unique or product-specific procedures or methods are required to maintain, repair, replace, inspect, or test equipment, such procedures or methods shall be provided by the manufacturer or installer. These procedures and any unique devices required by the procedures for inspection and testing shall be accessible on-site to elevator personnel [see also 8.6.1.2.2(b) and 8.6.1.2.2(c)].

Rationale: Update Code requirement references

8.11.2.1.2 Machine Rooms, Machinery Spaces, and Control Rooms/Spaces

(oo) The USI of the installed software matches the onsite documentation. See 2.26.1.7.1 and 8.6.1.2.2(e)(f)

Rationale: Update Code requirement references

8.11.3.1.1 Inside the Car

(dd) The USI of the installed software matches the onsite documentation. See 2.26.1.7.1 and 8.6.1.2.2(e)(f)

Rationale: Update Code requirement references
Figure Y-1 Maintenance Control Program Records

Rationale: Update appendix and references based on proposal. Add Permanent Records requirement 8.6.1.4.1(d).

MCP, related documents and records

8.6.1.2.1 Maintenance Control Program (MCP): A documented set of maintenance tasks, maintenance procedures, examinations and tests to ensure that equipment is maintained in compliance with the requirements of 8.6

8.6.1.2.2 On-Site Documents
(a) Wiring diagrams
(b) Procedures for inspection and test, not in A17.2
(c) Code-identified written and unique procedures
(d) Code-identified written checkout procedures
(e) Emergency evacuation and transparent enclosure cleaning procedures
(f) Code identified written procedures
(g) Code required USI for executable software
(h) Engineering documentation for skirt panels (A17.1.2019 and later)

8.6.1.4.1 On-Site Maintenance Records

8.6.1.4.1(a) MCP Records
Records viewable on site

8.6.1.4.1(b)(1) Repairs
Records viewable on site

8.6.1.4.1(b)(2) Replacements

8.6.1.4.1(c) Other Records
(1) Oil usage
(2) Firefighter’s Service Operation
(3) Periodic Tests
(4) A17.6 Replacement criteria compliance record

8.6.1.4.1(d) Permanent Records:
(1) Acceptance tests
(2) Code required escalator skirt verification requirements

Written records kept on site

Available to elevator personnel performing corrective action and all elevator personnel upon request

8.6.1.4.2 Call backs (Trouble Calls)

Written documents kept on site

Available for viewing on site by elevator personnel and instructions to locate MCP must shall be posted
Record 20-1186

Revise A17.1-2019 as follows:

Add the System to Monitor and Prevent Automatic Operation of Passenger and Freight Elevators with Faulty Door Contact Circuits (aka Door Lock Monitoring) retroactively to the Electric/Hydraulic Maintenance Sections, modeled after modified A17.1 & NYC requirements (Note: Coordinate proposal with active Records 13-806 and 17-2250).

8.6.1.3 It is not the intent of Section 8.6 to require changes to the equipment to meet the design, equipment nameplate(s), or performance standard other than those specified in 8.6.1.2, unless specifically stated in Section 8.6 (see 8.6.3.2, 8.6.4.24, 8.6.5.8, 8.6.5.18, 8.6.8.3, and 8.6.8.4.3.

8.6.4.24 System to Monitor and Prevent Automatic Operation of Passenger and Freight Elevators with Faulty Door Contact Circuits. All automatic passenger and freight elevators shall comply with 2.26.5.

8.6.5.18 System to Monitor and Prevent Automatic Operation of Passenger and Freight Elevators with Faulty Door Contact Circuits. All automatic passenger and freight elevators shall comply with 2.26.5.

Rationale: Door contact monitoring requirement 2.26.5 has been in the ASME A17.1\B44 code since 2000. However, there are potentially hundreds of thousands of existing elevators that lack this crucial safety function. These systems are designed to prevent fatal accidents caused by an elevator running with the car door/gate and/or the landing door open. Multiple component suppliers have developed solutions to meet the needs of jurisdictions that have mandated all existing elevators in their jurisdiction to be updated with this safety function. The safety benefits far outweigh the costs.

Note on Requirement 2.26.5: As modified by Record 13-806 that covers Swing Doors and TN 17-2250 that covers NYC FEO Phase II exception.
Record 20-1287

Proposed Revision to A17.1, 8.10.2.2.4 and 8.11.2.1.4 Outside Hoistway - AGP Marking:

8.10.2.2.4 Outside Hoistway

(p) Motor Controllers Not Installed in a Machine Room, Control Room, Control Space or Machinery Space (Item 11.23)
   (1) cabinet enclosure
   (2) AGP marking
   (3) cabinet doors and security
   (4) lighting
   (5) temperature and humidity control
   (6) Signage

8.11.2.1.4 Outside Hoistway

(p) Motor Controllers Not Installed in a Machine Room, Control Room, Control Space or Machinery Space (Item 11.23)
   (1) cabinet enclosure
   (2) AGP marking
   (3) cabinet doors and security
   (4) lighting
   (5) temperature and humidity control
   (6) Signage

Rationale: Added inspection of motor controllers not installed in a machine room, control room, machinery space or control space.
Record 20-1563

Proposed Revision to A17.1, Requirements 6.1.6.4 and 6.2.6.4 Handrail Speed-Monitoring Device:

6.1.6.4 Handrail Speed-Monitoring Device. A handrail speed-monitoring device shall be provided that will cause the activation of the alarm required by 6.1.6.3.1(b) without any intentional delay, whenever the speed of either handrail deviates from the step speed by 15% or more. The device shall also cause initiation of dynamic braking (6.1.5.3.4) or electric power to be removed from the driving-machine motor and brake when the speed deviation of 15% or more is continuous within a 2 s to 6 s range. The device shall be the manual reset type, or it shall be permitted to automatically reset not more than one time within 24 h of operation and thereafter require a manual reset before the next restart. Interruption of power during operation should not cause the device to lose the status of the timer nor the count of events.

6.2.6.4 Handrail Speed-Monitoring Device. A handrail speed-monitoring device shall be provided that will cause the activation of the alarm required by 6.2.6.3.1(b) without any intentional delay whenever the speed of either handrail deviates from the treadway speed by 15% or more. The device shall also cause electric power to be removed from the driving-machine motor and brake when the speed deviation of 15% or more is continuous within a 2 s to 6 s range. The device shall be of the manual-reset type or it shall be permitted to automatically reset not more than one time within 24 hr of operation and thereafter require a manual reset before the next restart. Interruption of power during operation should not cause the device to lose the status of the timer nor the count of events.

Rationale: to make the requirements mandatory.
Record 20-1675

Proposed Revision to A17.1-2019/CSA B44:19:

2.27.11.6.1 The variable message signs required by 2.27.11.2.2 shall indicate one of the following messages:

(a) On all floors in the elevator evacuation zone, with the exception of (d), they shall indicate that the elevators are available for evacuation and once a landing call is registered at the floor, the estimated time duration in minutes for the next elevator to arrive, including when the estimate time is less than a minute.

NOTE [2.27.11.6.1(a)]: Example text: “Press button for evacuation”; “Next elevator in about 2 minutes”
Example text: “Elevators and stairs available for evacuation, Next car in about 2 minutes.”

Rationale: To assist in the use of elevators the phrase, “Press button for evacuation” on the variable message displays is more instructive to the occupants that a landing call must be placed in order for the elevator system to be used. Once the landing call is placed the appropriate ETA will be displayed on the variable message display. The ETA being displayed after that landing call has been registered is a byproduct of the demand and only information for the potential passenger to help make a decision on which route to take, stairs or elevator.

Record 20-1715

Proposed revision to A17.1-2019/CSA B44:19

2.27.3.1.1 A three position key-operated switch that will not change position without a deliberate action by the user, shall be

... (c) located in the lobby, installed a minimum of 915 mm (36 in.) and a maximum of 1680 mm (66  in.) above the floor as measured to the center line of the switch, within sight of the elevator or all elevators in that group and shall be readily accessible.

Rationale: To specify an acceptable range for the height of the “FIRE RECALL” switch above the finished floor to be readily accessible to firefighters. This is based on established heights for Phone-Jack in NFPA 72.
Proposed Revision to A17.1 Nonmandatory Appendix I, Figure I-10 and Requirement 6.2.3.5.1, 6.2.3.6.2 Belt-Type Treadway:

Replace current figure with the following:

![Fig I-10 Moving Walk Treadway Slots](image)

Revise 6.2.3.6.2 (Belt-Type Treadway) as follows:

6.2.3.6.2 Slotting of the Treadway. The Treadway surface shall be slotted in a direction parallel to its travel for purposes of meshing with combplates at the landings. Each slot shall be not more than 6.4 mm (0.25 in.) wide at the treadway surface and not less than 4.8 mm (0.188 in.) deep, and the distance from center to center of adjoining slots shall be not more than 13 mm (0.50 in.). Sides of slots shall be permitted to slope for mold draft purposes and shall be permitted to be filleted at the bottom. Slots shall be located on each side of the belt to form a cleat adjacent to the skirt panel. (See Nonmandatory Appendix I, Figure I-10.)
Revise 6.2.3.5.1 (Pallet-Type Treadway) as follows:

6.2.3.5.1 Slotting of Treadway. The treadway surface of each pallet shall be slotted in a direction parallel to its travel. Each slot shall be not more than $6.5 \text{ mm}$ (0.25 in.) wide at the treadway surface and not less than $9.5 \text{ mm}$ (0.375 in.) deep; and the distance from center to center of adjoining slots shall be not more than $9.5 \text{ mm}$ (0.375 in.). Sides of the slots shall be permitted to slope for mold draft purposes and shall be permitted to be filleted at the bottom. Slots shall be located on each side of the pallet to form a cleat adjacent to the skirt panel. (See Nonmandatory Appendix I, Figure I-10.)

Rationale: The current Nonmandatory Appendix I, Figure I-10 contains a mixture of dimensional information from 6.2.3.5.1 for pallet type treadways and 6.2.3.6.2 for Belt-Type treadways. A17.1 currently only references the figure in 6.2.3.5.1. The revised graphic clarifies the requirements for the two different treadway types and adds the reference to Figure I-10 in 6.2.3.6.2 for consistency with reference included in 6.2.3.5.1. 6.2.3.5.1 is revised for consistency of SI and US Customary units between 6.2.3.5.1 and 6.2.3.6.2.
Proposed Revision to A17.1, Requirements 6.1.5.3 and 6.2.5.3 Data Plate for Escalators and Moving Walks:

6.1.5.3 Brakes 
6.1.5.3.1 Escalator Driving-Machine Brake 
(d) The escalator brake shall be provided with a data plate conforming to 8.13.1 that is readily visible and located on the machine brake, and when necessary, a duplicate data plate with the certification mark shall be placed adjacent to the machine brake. The data plate shall indicate …

6.2.5.3 Brakes 
6.2.5.3.1 Moving Walk Driving-Machine Brakes
(d) The moving walk brake shall be provided with a data plate conforming to 8.13.1 that is readily visible and located on the machine brake and, when necessary, a duplicate data plate with the certification mark shall be placed adjacent to the machine brake. The data plate shall indicate …

Rationale: To require the brake data plate to conform with the new requirements added in A17.1/B44-2019 Requirement 8.13.1.