

## ESCALATORS AND MOVING WALKS - ASME A17.1 ANNUAL MAINTENANCE AND TESTING CHECKLIST

<b>Maintenance Company:</b> _____ <b>Site Name:</b> _____	<b>Year:</b> _____ <b>ESC/MW -</b> _____
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	Periodic Insp. 8.11.4.1 (A17.2 Item)	Jan-Jun	Jul-Dec	Category One (Annual) Tests (8.11.4.2)		Jan-Dec		
1	General Fire Protection (7.1 and 9.1)			8.11.4.2.1	Machine Space			
2	Geometry (7.2 and 9.2)			8.11.4.2.2	Stop Switch			
3	Handrails (7.3 and 9.3)			8.11.4.2.3	Controller and Wiring			
4	Entrance and Egress (7.4 and 9.4)			8.11.4.2.4	Drive Machine and Brake			
5	Lighting (7.5 and 9.5)			8.11.4.2.5	Speed Governor			
6	Caution Signs (7.6 and 9.6)			8.11.4.2.6	Broken Drive Chain Device			
7	Combplate (7.7 and 9.7)			8.11.4.2.7	Reversal Stop Switch			
8	Deck Barricade Guard (7.8 and 9.8)			8.11.4.2.8	Broken Step Chain/Treadway Dev.			
9	Steps and Treadway (7.9 and 9.9)			8.11.4.2.9	Step Upthrust Device			
10	Operating Devices (7.10 and 9.10)			8.11.4.2.10	Missing Step or Pallet Device			
11	Skirt Obstruction Device (7.11)			8.11.4.2.11	Step and Pallet Level Device			
12	Handrail Entry Device (8.13 and 10.13)			8.11.4.2.12	Steps, Pallets Chains and Trusses			
13	Egress Restriction Device (7.13 and 9.13)			8.11.4.2.13	Handrail Safety Systems			
14	Speed (7.14 and 9.14)			8.11.4.2.14	Heaters			
15	Balustrades (7.15 and 9.15)			8.11.4.2.15	Permissible Stretch in Esc. Chains			
16	Ceiling Intersection (7.16 and 9.16)			8.11.4.2.16	Disconnected Motor Safety Device			
17	Skirt Panels (7.17 and 9.17)			8.11.4.2.17	Response to Smoke Detectors			
18	Outdoor Protection (7.18 and 9.18)			8.11.4.2.18	Comb-Step/Comb-Pallet Impact Dev.			
19	Machinery Space (2.1 and 4.1)			8.11.4.2.19	Step/Skirt Index Check			
20	Additional Stop Sws. (2.2 and 4.2)			8.11.4.2.20	Step/Skirt Clearance (Loaded Gap)			
21	Controller and Wiring (2.3 and 4.3)			<b>Periodic Cleaning/min. of once every 24-months (8.6.8.14)</b>				
22	Code Data Tag (8.14 and 10.14)			Date of Last Internal Cleaning and Inspection				
<b>Step Skirt Index Measurement (Optional)</b>				<b><i>Call to arrange for a State inspection prior to closing up the escalator after cleaning!</i></b>				
Step Skirt Index is to be tested each year.				<b>Safety Zone for this escalator/moving walk</b>				
8.6.8.3.3 The escalator step/skirt performance index shall be: (a) less than or equal to 0.15; (b) less than or equal to 0.25 for escalators installed under ASME A17.1a, 2002 and later editions and when a skirt deflector device complying with the requirements of 6.1.3.3.7 is provided; or (c) less than or equal to 0.4 for escalators installed under ASME A17.1-2000 and earlier editions and skirt deflector device is provided.				Width =	mm	Length =	mm	
					in.		in.	
				6.1.3.6.4 Safety Zone. The entry and exit zone shall be kept clear of all obstacles. The width of the zone shall be not less that the width between the centerlines of the handrails plus 200 mm (8 in.). The length of the zone, measured from the end of the newel, shall be no less than twice the distance between the centerline of the handrails. space shall be provided to accommodate all traffic in the safety zone.				

### 8.11.4 Periodic Inspection and Tests of Escalators and Moving Walks

All references to Items are to Items in ASME A17.2.3, Inspectors' Manual for Escalators and Moving Walks.

#### 8.11.4.1 Periodic Inspection and Test Requirements.

Inspections shall include the following:

NOTE: For inspection frequency, see 8.11.1.3.

- (a) General Fire Protection (Items 1.1 and 3.1);
- (b) Geometry (Items 1.2 and 3.2);
- (c) Handrails (Items 1.3 and 3.3);
- (d) Entrance and Egress (Items 1.4 and 3.4);
- (e) Lighting (Items 1.5 and 3.5);
- (f) Caution Signs (Items 1.6 and 3.6);
- (g) Combplate (Items 1.7 and 3.7);
- (h) Deck Barricade Guard (Items 1.8 and 3.8);
- (i) Steps and Treadway (Items 1.9 and 3.9);
- (j) Operating Devices (Items 1.10 and 3.10);
- (k) Skirt Obstruction Devices (Item 1.11);
- (l) Handrail Entry Device (Items 1.12 and 3.12);
- (m) Egress Restriction Device (Items 1.13 and 3.13);
- (n) Speed (Items 1.14 and 3.14);
- (o) Balustrades (Items 1.15 and 3.15);
- (p) Ceiling Intersection Guards (Items 1.16 and 3.16);
- (q) Skirt Panels (Items 1.17 and 3.17);
- (r) Outdoor Protection (Items 1.18 and 3.18);
- (s) Machinery Space Access, Lighting, Receptacle, and Condition (for remote machine rooms only) (Items 2.1 and 4.1);
- (t) Additional Stop Switch(es) (Items 2.2 and 4.2);
- (u) Controller and Wiring (Items 2.3 and 4.3);
- (v) Code Data Plate (2.23.2) (Item 2.14).

#### 8.11.4.2 Periodic Inspection and Test Requirements — Category 1

NOTE: For test frequency, see 8.11.1.3.

**8.11.4.2.1 Machine Space.** The machine space access, lighting, receptacles, operation, and conditions shall be examined (Items 2.1 and 4.1).

**8.11.4.2.2 Stop Switch.** The machine space stop switches shall be tested (Items 2.2 and 4.2).

**8.11.4.2.3 Controller and Wiring.** Controller and wiring shall be examined (Items 2.3 and 4.3).

**8.11.4.2.4 Drive Machine and Brake.** The drive machine and brakes shall be examined and tested, including test of the brake torque (Items 2.4 and 4.4).

**8.11.4.2.5 Speed Governor.** The mechanical speed governor, if required, shall be tested by manually operating the trip mechanism (Items 2.5 and 4.5).

**8.11.4.2.6 Broken Drive Chain Device.** Operation of the broken drive chain device, on the drive chain, shall be tested by manually operating the actuating mechanism (Items 2.6 and 4.6).

**8.11.4.2.7 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 (Items 2.7 and 4.7). If the device cannot be manually operated, the person or firm maintaining the equipment shall provide a written check-out procedure and demonstrate the device complies with the requirements of the Code.

#### 8.11.4.2.8 Broken Step Chain or Treadway

**Device.** The broken or slack step chain or treadway device shall be tested by manual operation (Items 2.8 and 4.8).

**8.11.4.2.9 Step Upthrust Device.** The operation of the step upthrust device shall be tested by manually displacing the step, causing the device to operate (Items 1.9 and 2.9).

**8.11.4.2.10 Missing Step or Pallet Device.** The missing step or pallet device shall be tested by removing a step or pallet and verifying that the device will properly function (Items 2.10 and 4.10).

**8.11.4.2.11 Step or Pallet Level Device.** The step, or pallet level device shall be tested by simulating an out of level step or pallet and verifying that the device functions properly (Items 2.11 and 4.11).

#### 8.11.4.2.12 Steps, Pallet, Step or Pallet

**Chain, and Trusses.** The steps, pallet, step or pallet chain, and trusses shall be visually examined for structural defects, mechanical condition, and buildup of combustible materials (Items 2.12 and 4.12).

**8.11.4.2.13 Handrail Safety Systems.** The handrail operating system shall be visually examined for condition. The handrail entry device, and the stopped handrail or handrail speed monitoring device, shall be

tested by disconnecting of handrail motion sensor (Items 2.13 and 4.13).

**8.11.4.2.14 Heaters.** For outdoor escalators and moving walks that require heaters, test the heaters for condition and operation (Items 1.18.2 and 3.18.2).

**8.11.4.2.15 Permissible Stretch in Escalator Chains.** Escalators shall have periodic examination of the clearance between successive steps to detect wear or stretch of the step chains. The clearance shall not exceed 6 mm (0.25 in.).

**8.11.4.2.16 Disconnected Motor Safety Device.** Operation of the device shall be tested and verified (see 6.1.6.3.10 or 6.2.6.3.8) (Item 2.6 or 4.6).

#### 8.11.4.2.17 Response to Smoke Detectors (6.1.6.8 or 6.2.6.7)

#### 8.11.4.2.18 Comb-Step or Comb-Pallet Impact Device

#### 8.11.4.2.19 Step/Skirt Performance Index

(a) The escalator skirt shall not be cleaned, lubricated, or otherwise modified in preparation for testing. The escalator instantaneous step/skirt index measurements [6.1.3.3.7(a)] shall be recorded at intervals no larger than 150 mm (6 in.) from each side of two distinct steps along the inclined portion of the escalator, where the steps are fully extended. Test steps shall be separated by a minimum of 8 steps.

(b) A load of 110 N (25 lbf) shall be laterally applied from the step to the adjacent skirt panel. The applied load shall not deviate from 110 N (25 lbf) by more than  $\pm 11$  N (2.5 lbf). The load shall be distributed over a round or square area no less than 1 940 mm<sup>2</sup> (3 in.<sup>2</sup>) and no more than 3 870 mm<sup>2</sup> (6 in.<sup>2</sup>).

(c) No vertical load exceeding 220 N (50 lbf) shall be applied to the test step and adjacent steps.

(d) The coefficient of friction shall be measured with the test specimen conforming to the requirements of 6.1.3.3.7(b) sliding in the direction of the step motion under a 110 N (25 lbf) normal force at the operating speed of the escalator and shall be measured with devices having sensitivity better than  $\pm 2.2$  N (0.5 lbf). The direction of step motion shall be the direction of normal operation. If the escalator is operated in both directions, the down direction shall be used for the test.

(e) For both the coefficient of friction measurement and the loaded gap measurements, the center of the applied load shall be between 25 mm (1 in.) and 100 mm (4 in.) below the nose line of the steps. The center of the applied load shall be not more than 250 mm (10 in.) from the nose of the step. See Fig. 8.11.4.2.19(d).

(f) Verify that the step/skirt performance index conforms to the requirements in 6.1.3.3.7 and 8.6.8.3 (Item 1.17.2).

**8.11.4.2.20 Clearance Between Step and Skirt (Loaded Gap).** Escalators installed under ASME A17.1d–2000 shall be tested as follows:

(a) Loaded gap measurements shall be taken at intervals not exceeding 300 mm (12 in.) in transition region (6.1.3.6.5) and before the steps are fully extended. These measurements shall be made independently on each side of the escalator.

(b) The applied load shall not deviate from 110 N (25 lbf) by more than  $\pm 11$  N (2.5 lbf) (6.1.3.3.5). The load shall be distributed over a round or square area no less than 1 940 mm<sup>2</sup> (3 in.<sup>2</sup>) and no more than 3 870 mm<sup>2</sup> (6 in.<sup>2</sup>).

(c) For the loaded gap measurements, the center of the applied load shall be between 25 mm (1 in.) and 100 mm (4 in.) below the nose line of the steps. The center of the applied load shall be not more than 250 mm (10 in.) from the nose of the step. See Fig. 8.11.4.2.19(d).

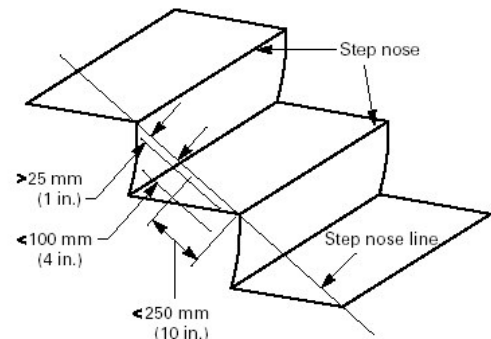


FIG. 8.11.4.2.19(d)