524 CMR 8.00: PRACTICAL TESTS AND INSPECTIONS

Section

8.01: General

524 CMR 8.00 prescribes the practical tests and inspections for elevators and supplements testing and inspection requirements of ASME A17.1-2013/CSA B44-13: *Safety Code for Elevators and Escalators*. Where 524 CMR 8.00 requirements conflict with ASME A17.1-2013/CSA B44-13: *Safety Code for Elevators and Escalators* requirements, the provisions of 524 CMR 8.00 shall prevail.

8.02: Requirements

Practical tests and inspections of elevators, as required by M.G.L. c. 143, §§ 62A, 63 and 64, are subject to the following requirements:

(1) All practical tests and inspections shall be performed by a Massachusetts licensed elevator mechanic under the supervision of a state elevator inspector.

(2) Pursuant to M.G.L. c. 143, § 64 the state elevator inspector has discretion to order a practical test or inspection as he or she deems necessary, independent of other tests and inspections required by M.G.L. c. 143.

(3) A periodic inspection required by M.G.L. c. 143, § 64 shall entail a practical test with no contract-load of all safety devices and equipment to determine that they function as required by the applicable codes. It is further required that every fifth periodic inspection shall entail a full-load safety test. (Refer to 524 CMR 11.00: *Elevators Placed out of Service or Decomissioned* for elevators placed out of service.)

(4) A biennial inspection required by M.G.L. c. 143, § 64 shall entail a practical test with no contract-load of all safety devices and equipment to determine that they function as required by the applicable codes. It is further required that every third biennial inspection shall entail a full-load safety test.

(5) Car and counterweight safeties and governors shall be tested as follows: Governor operated instantaneous type safeties or sliding type safeties of elevators shall be tested at rated speed by tripping the governor. The governor shall be separately tested for tripping speed.

(6) Each governor shall be sealed directly after testing by the state elevator inspector conducting the test. No person other than a state elevator inspector shall break or remove the seal.

(7) The application of a safety having no speed governor shall be obtained by a free drop test which may be made without detaching the ropes.

(8) Car and counterweight oil buffers, if any, shall be tested periodically as required by M.G.L. c. 143, § 64 with no load on the platform at rated car speed, and with a full contract load every fifth periodic inspection.

(9) Contract Load Test for Hydraulic Elevators. A contract load test shall be made of every hydraulic elevator or dumbwaiter before the equipment is placed in regular service.

(a) The test shall be made with no load and a test with full rated load on the car in order to determine the car speed under each specified condition of loading in both the up and down directions.

(b) A test check of the working pressure including, in case of pressure tanks, a check of the accuracy of the tank pressure gauge.

(c) A test of the relief valve by-pass pressure shall be made in accordance with ASME A17.1-2013/CSA B44-13: *Safety Code for Elevators and Escalators*.

8.02: continued

(d) After the test of the relief valve setting and system pressure test, the following test shall be performed and witnessed by a Massachusetts licensed elevator inspector employed by the Office. Cylinders that are not exposed shall be tested as follows:

1. Note the amount of oil in the pit and seal leak collection container.
2. Park the elevator at a convenient location and open the main line disconnect.
3. Mark the level of the oil in the tank.
4. Wait at least 15 minutes and measure the amount that the car has moved down.
5. Compute the volume of oil loss as a result of the car movement as follows:

$$V = 3.1416 \times R^2 \times L$$

Where:
V = volume of oil in cubic inches
R = radius of plunger (in.)
L = movement of car (in.)

6. Compare this to the change in volume in the pit seal collection container and the tank.

Example: 1 = 7", Plunger diameter = 6"
$V = 3.1416 \times 9 \times 7 = 198$ in^3
(Note: 231 in^3 = 1 U.S. gallon)

7. If necessary, continue the test to verify the source of the leak.
8. If it is determined that a leak exists underground, the unit shall immediately be taken out of service.

(10) All escalators will be tested with contract load at the time of acceptance and will have a brake data plate installed. All escalators with brake date plates may be tested thereafter by verifying the brake torque. If the environment in which a unit is operating makes the stopping capability of the brake questionable, a weight test will be used to reconfirm the torque setting of the brake.

(11) All existing escalators without brake data plates or units with more than one driving machine shall be tested with contract load every fifth periodic inspection and whenever the stopping capability of the brake is questionable.

(12) All escalators will require annually a step/skirt performance index test complying with ASME A17.1-2013/CSA B44-13: *Safety Code for Elevators and Escalators*.

REGULATORY AUTHORITY

524 CMR 8.00: M.G.L. c. 143, §§ 62 through 71G.