

# Appendix - Periodic Testing of Elevating Devices

## Summary of the Code Requirements on What Needs to Be Tested

This guide provides a summary of the ASME A17.1/CSA B44 and CSA B355 codes requirements for the periodic testing and examination of

- A. Electric Elevators (Table 1)
- B. Hydraulic Elevators (Tables 2)
- C. Dumbwaiter, Elevators with Other Types of Driving Machines, and Special Application Elevators
- D. Wind Turbine Tower Elevators (Table 3)
- E. Elevators for Construction Use (Table 4)
- F. Escalators and Moving Walks (Table 5)
- G. Platform Lifts and Stair Lifts for Barrier Free Access-Lifts for Persons with Physical Disabilities (Table 6)

### Important Notes:

In the event of any discrepancy between this document and the [Elevating Devices Safety Regulation](#) (EDSR), the EDSR prevails.

This document and the accompanying tables summarize the code requirements and are not intended to be fully comprehensive. In some cases, certain applicable tests may not be explicitly listed.

It remains the responsibility of the elevating device contractor and mechanic to review the full code and ensure that all required periodic tests are identified and completed in compliance with the applicable codes.

For details on testing and examination requirements, refer to the adopted edition of the applicable code.

This document is based on ASME A17.1-2016/CSA B44-16 and CSA B355-09. Where a newer edition of either code has been adopted, the maintenance requirements of the adopted code edition must be followed (Refer to the [Schedule of EDSR](#) for the currently adopted code editions).

### A. Electric Traction Elevators

Tables 1 outlines the requirements of the ASME A17.1/CSA B44 code (Code) on Category 1 (Code Clause 8.6.4.19) and Category 5 (Code Clause 8.6.4.20) periodic testing of Electric Traction Elevators.

Table 1. Periodic Tests Required for Electric Traction Elevators

Device	Category 1 Periodic Tests	Category 5 Periodic Tests
Oil Buffers	8.6.4.19.1	8.6.4.20.3 <sup>(5)</sup>
Safeties (Car and Counterweight Safeties)	8.6.4.19.2	8.6.4.20.1 <sup>(4)(6)</sup>
Governors	8.6.4.19.3	8.6.4.20.2 <sup>(5)</sup>
Drive Machine Brake	SO-L1 110225 4 <sup>(2)</sup>	8.6.4.20.4 <sup>(4)</sup>

Ascending Car Overspeed Protection, Unintended Car Movement Devices, and Emergency Brake	8.6.4.19.11	8.6.4.20.11
Normal and Final Terminal Stopping Devices.	8.6.4.19.5	-
Firefighters' Emergency Operation <sup>(5)</sup>	8.6.4.19.6 <sup>(3)(6)</sup>	-
Standby or Emergency Power Operation	8.6.4.19.7	-
Power Operation of Door System	8.6.4.19.8	-
Broken Rope, Tape, or Chain Switch	8.6.4.19.9	-
Functional Safety of SIL Rated Device(s)	8.6.4.19.10	-
Traction-Loss Detection Means	8.6.4.19.12	-
Broken-Suspension-Member and Residual-Strength Detection Means	8.6.4.19.13	-
Emergency Communications	8.6.4.19.15	
Means to Restrict Hoistway or Car Door Opening	8.6.4.19.16	-
Earthquake Operation	8.6.4.19.17	-
Emergency Terminal Stopping and Speed-Limiting Devices	-	8.6.4.20.6
Power Opening of Doors	-	8.6.4.20.7
Leveling Zone and Leveling Speed	-	8.6.4.20.8
Inner Landing Zone (static control elevators)	-	8.6.4.20.9
Braking System, Traction, and Traction Limits		8.6.4.20.10 <sup>(4)</sup>
Occupant Evacuation Operation	-	-

<sup>(1)</sup> Test is applicable, where device is provided/installed.

<sup>(2)</sup> For requirements on annual brake testing of electric elevators refer to [Safety Order SO-L1 110225 4: Driving Machine Brake - Electric Elevators](#)

<sup>(3)</sup> For more information on firefighters' emergency operation testing, refer to [IB-ED 2020-04: Firefighters' Emergency Operation Testing Requirements](#)  
8.6.4.19.12 (b)

<sup>(4)</sup> For the permitted *Alternative Test Method* refer to 8.6.4.20.1(b), 8.6.4.20.4(b), and 8.6.4.20.10 (b). A test tag as required in 8.6.1.7.2 shall be provided.

<sup>(5)</sup> A metal tag shall be attached to the equipment after completion of the test. This is in addition to the periodic test record attached to the controller required in 8.6.1.7.2.

<sup>(6)</sup> Refer to the [Schedule \(16\)](#) of the EDSR or the information bulletin [IB-ED-2019-01](#) for the amendments to requirements 8.6.4.19.6 and 8.6.4.20.1(a).

Additional Notes:

- A test is applicable, where the associated device is required or provided.
- A periodic test record shall be installed adjacent to or attached to the controller of each unit, required by 8.6.1.7.2.
- Alternative test methods are permitted for the testing of safeties, drive machine brake, as well as the braking system, traction, and traction limits. For details, consult with the maintenance contractor and refer to the [Directive D-ED 2021-01: Approval of alternative testing for category 5 testing](#) and the Code

## B. Hydraulic Elevators

Table 2 below outline the requirements of the ASME A17.1/CSA B44 code (Code) on Category 1 (Code Clause 8.6.5.14) and Category 5 (8.6.5.16) periodic testing of Hydraulic Elevators.

It must be noted that clause 8.6.5 of the Code requires that hydraulic elevators meet the applicable testing requirements of both 8.6.4 and 8.6.5. As a result, hydraulic elevators are subject to, in addition to tests specified under 8.6.5.14 and 8.6.5.16, applicable Category 1 and Category 5 tests listed under 8.6.4.19 and 8.6.4.20, including

<b>Additional Category 1 Tests:</b>	<b>Additional Category 5 Tests:</b>
<ul style="list-style-type: none"> <li>○ Emergency communications</li> <li>○ Means to restrict hoistway or car door opening</li> </ul>	<ul style="list-style-type: none"> <li>○ Power opening of doors</li> <li>○ Leveling zone and leveling speed</li> </ul>

Tables 2 reflects the applicability of these tests based on 8.6.5.

**Roped Hydraulic Elevators:** In addition to the periodic tests listed in Table 2, roped hydraulic elevators are subject to additional test requirements, which are listed at the end of Table 2. These tests are specific to the unique configuration of roped systems and must be performed as part of the applicable Category 1 or Category 5 periodic testing, as required by the Code.

Pressure vessels and roped water-hydraulic elevators are also subject to Category 3 periodic tests (Refer to the Code for details).

Table 2. Periodic Tests Required for Hydraulic Elevators

<b>Device</b>	<b>Category 1 Periodic Tests</b>	<b>Category 5 Periodic Tests</b>
<b>Oil Buffers</b>	8.6.4.19.1 <sup>(1)(4)</sup>	8.6.5.16.1 <sup>(1)</sup> (8.6.4.20.3)
<b>Normal and Final Terminal Stopping Devices.</b>	8.6.4.19.5 <sup>(4)</sup> (NTSD only)	-
<b>Firefighters' Emergency Operation</b> <sup>(5)</sup>	8.6.4.19.6 <sup>(2)(4)(5)(6)</sup>	-
<b>Standby or Emergency Power Operation</b>	8.6.4.19.7 <sup>(2)(4)</sup>	-
<b>Power Operation of Door System</b>	8.6.4.19.8 <sup>(4)</sup> , & 8.6.5.14.6	-
<b>Emergency Communications</b>	8.6.4.19.15 <sup>(3)</sup>	
<b>Means to Restrict Hoistway or Car Door Opening</b>	8.6.4.19.16 <sup>(3)</sup>	-
<b>Earthquake Operation</b>	8.6.5.14.8	-
<b>Relief Valve Verification of Setting and System Pressure Test.</b>	8.6.5.14.1	-
<b>Hydraulic Cylinders and Pressure Piping</b>	8.6.5.14.2	-
<b>Low Oil Protection Operation</b>	8.6.5.14.3(i)	-
<b>Emergency Terminal Stopping Device and Emergency Terminal Speed-Limiting Device</b>	8.6.5.14.3(h)	†
<b>Flexible Hose and Fitting Assemblies</b>	8.6.5.14.4	-
<b>Pressure Switch</b>	8.6.5.14.5	-
<b>Power Opening of Doors</b>	-	8.6.4.20.7 <sup>(2)(3)</sup>
<b>Leveling Zone and Leveling Speed</b>	-	8.6.4.20.8 <sup>(3)</sup> (3.26.3.2)
<b>Plunger Gripper</b>	-	8.6.5.16.4 <sup>(1)</sup>
<b>Overspeed Valves</b>	-	8.6.5.16.5 <sup>(1)</sup>
<b>Leveling the Car (Class C2 Freight Elevator)</b>	-	8.6.5.16.6

<i>Additional Periodic Tests Required for Roped Hydraulic Elevators:</i>		
<b>Safeties</b>	8.6.4.19.2 <sup>(2)(4)</sup>	8.6.5.16.1 <sup>(2)</sup> (8.6.4.20.1 <sup>(6)</sup> )
<b>Governors</b>	8.6.4.19.3 <sup>(2)(4)</sup>	8.6.5.16.1 <sup>(2)</sup> (8.6.4.20.2)
<b>Broken Rope, Tape, or Chain Switch</b>	8.6.4.19.9 <sup>(2)(3)</sup>	-
<b>Slack-Rope Devices</b>	8.6.5.14.7 <sup>(2)</sup>	-
<b>Coated Ropes Broken Wire Detection Test</b>	-	8.6.5.16.2 <sup>(1)</sup>
<b>Wire Rope Fastenings</b>	-	8.6.5.16.3 <sup>(1)</sup>

- <sup>(1)</sup> Test is applicable only where device is provided/installed.
- <sup>(2)</sup> Testing of safeties, governors, broken rope, tape, or chain switch, standby or emergency power operation, firefighter's emergency operation, and slack-rope device are applicable to roped-hydraulic elevators, where provided.
- <sup>(3)</sup> Tests required by 8.6.5.
- <sup>(4)</sup> Additional tests required by 8.6.5.14.3.
- <sup>(5)</sup> For more information on firefighters' emergency operation testing, refer to [IB-ED 2020-04: Firefighters' Emergency Operation Testing Requirements](#)
- <sup>(6)</sup> Refer to the [Schedule](#) (16) of the EDSR or the information bulletin [IB-ED-2019-01](#) for the amendments to requirements 8.6.4.19.6 and 8.6.4.20.1 (a).

Additional Notes:

- A test is applicable, where the associated device is required or provided.
- A periodic test record shall be installed adjacent to or attached to the controller of each unit, required by 8.6.1.7.2.

### **C. Dumbwaiter, Elevators with Other Types of Driving Machines, and Special Application Elevators**

**Electric elevators with winding-drum machines** are subject to the applicable Category 1 and Category 5 periodic tests specified in Table 1 and the Slack-Rope Devices and Stop Motion Switch test in 8.6.4.19.4.

**Dumbwaiters with/without automatic transfer devices** are subject to the applicable Category 1 periodic tests specified in Tables 1-2. (i.e., 8.6.4.19 and 8.6.5.14). Refer to 8.6.10.1.1 for more details.

**Material lifts** are subject to the applicable Category 1 periodic tests specified in Tables 1-2.

**Rack-and-pinion elevators** are subject to the applicable Category 1 and Category 5 periodic tests specified in Table 1. Refer to 8.6.6.1.1 for more details. For Category 3 tests, refer to 8.6.5.15.

**Screw-column elevators** are subject to the applicable Category 1 and Category 5 periodic tests specified in Table 1. Refer to 8.6.6.2.1 for more details.

**Limited-use/limited applications (LULA) elevators** are subject to the applicable Category 1 and Category 5 periodic tests specified in Tables 1-2. Refer to 8.6.7.2.1 for more details.

**Sidewalk elevators** are subject to the applicable Category 1 and Category 5 periodic tests specified in Tables 1-2. Refer to 8.6.7.5.1 for more details.

**Rooftop elevators** are subject to the applicable Category 1 and Category 5 periodic tests specified in Tables 1-2. Refer to 8.6.7.6.1 for more details.

**Outside emergency elevators** are subject to the applicable Category 1 and Category 5 periodic tests specified in Tables 1-2, except 8.6.4.19.6 and 8.6.4.19.9. Additional required tests are referenced in requirement 2.12.3 of ASME A17.7/CSA B44.7. Refer to 8.6.7.12.1 and 8.6.7.12.2 for more details.

Pressure vessels and roped water-hydraulic elevators are subject to Category 3 periodic tests, as specified in 8.6.5.15.2 and 8.6.5.15.1.

### D. Wind Turbine Tower Elevators

Table 3. Periodic Tests Required for Wind Turbine Tower Elevators

Device	Category 1 tests	Notes
Car and Counterweight Safeties	8.6.7.11.3	Type A, B, C car safeties: with rated load. Counterweight safeties: no load.
Wire Rope Gripping Safeties (with slack rope actuation, or internal centrifugal governor)	8.6.7.11.1	Test with rated load.
Governor-Operated Safeties	8.6.7.11.1	Test manually at the rated speed.

For details on testing requirements and how the tests must be conducted, refer to the 8.6.7.11 of the ASME A17.1/CSA B44 Code.

### E. Elevators for Construction Use (Section 5.10 Elevators)

Elevators for Construction Use are subject to the applicable periodic tests specified in Table 1 and as specified in Table 4.

Table 4. Periodic Tests Required for Elevators for Construction Use

	Category 1 tests	Category 5 tests
<b>Electric Elevators for Construction Use</b>	8.6.4.19.1 through 8.6.4.19.5: <ul style="list-style-type: none"> <li>▪ Oil Buffers</li> <li>▪ Safeties (Car and Counterweight Safeties)</li> <li>▪ Governors</li> <li>▪ Normal and Final Terminal Stopping Devices.</li> <li>▪ Slack-Rope Devices and Stop Motion Switch on Winding-Drum Machines.</li> <li>▪ Drive Machine Brake</li> <li>▪ Ascending Car Overspeed and Unintended Car Movement Protection <sup>(1)</sup></li> </ul>	8.6.4.20.1 through 8.6.4.20.4, and 8.6.4.20.6: <ul style="list-style-type: none"> <li>▪ Oil Buffers</li> <li>▪ Safeties (Car and Counterweight Safeties)</li> <li>▪ Governors</li> <li>▪ Emergency Terminal Stopping and Speed-Limiting Devices</li> <li>▪ Drive Machine Brake</li> <li>▪ Ascending car overspeed and unintended car movement protection <sup>(1)</sup></li> </ul>
<b>Hydraulic Elevators for Construction Use</b>	8.6.5.14.1, 8.6.5.14.2, 8.6.5.14.3(a) through (d), 8.6.5.14.4, and 8.6.4.19.8: <ul style="list-style-type: none"> <li>▪ Oil Buffers</li> <li>▪ Safeties (Car and Counterweight Safeties)</li> <li>▪ Governors</li> <li>▪ Normal and Final Terminal Stopping Devices.</li> <li>▪ Relief Valve Verification of Setting and System Pressure Test.</li> <li>▪ Hydraulic Cylinders and Pressure Piping</li> <li>▪ Flexible Hose and Fitting Assemblies</li> <li>▪ Power Operation of Door System</li> </ul>	8.6.5.16: <ul style="list-style-type: none"> <li>▪ All Category 5 tests applicable to hydraulic elevators as specified in Table 2.</li> </ul>

<sup>(1)</sup> [EDSR S.34\(4\)](#): A person who tests a construction elevator must test it for ascending car overspeed and unintended car movement protection.

Refer to 8.6.7.10.1 and 8.6.7.10.2 for more details.

## F. Escalators and Moving Walks

Table 5 below lists the required Category 1 periodic tests for escalators (8.6.8.15) outlined in the ASME A17.1/CSA B44 Code. For details, refer to 8.6.8.15.1 through 8.6.8.15.24 for escalators.

Table 5. Summary of required periodic testing for escalators

Device	Category 1 tests	Notes
Machine Room and Truss Interior	8.6.8.15.1	Examine, clean
Stop Switch	8.6.8.15.2	Test
Controller and Wiring	8.6.8.15.3	Examine
Drive Machine and Brake	8.6.8.15.4	Examine and test
Speed Governor	8.6.8.15.5	Test
Broken Drive-Chain Device	8.6.8.15.6	Test
Reversal Stop Switch	8.6.8.15.7	Test
Broken Step-Chain or Treadway Device	8.6.8.15.8	Test
Step Upthrust Device	8.6.8.15.9	Test
Missing Step or Pallet Device	8.6.8.15.10	Test
Step or Pallet Level Device	8.6.8.15.11	Test
Steps, Pallet, Step or Pallet Chain, and Trusses.	8.6.8.15.12	Examine
Handrail Safety Systems	8.6.8.15.13	Examine
Heaters for outdoor escalators and moving walks	8.6.8.15.15	Test
Permissible Stretch in Escalator Chains.	8.6.8.15.16	Exam
Disconnected Motor Safety Device		Test
Response to Smoke Detectors	8.6.8.15.17	
Comb-Step or Comb-Pallet Impact Device.	8.6.8.15.18	Test
Step/Skirt Performance Index	8.6.8.15.19	Test
Clearance Between Step and Skirt (Loaded Gap).	8.6.8.15.20	Test
Inspection Control Devices	8.6.8.15.21	Test
Step Lateral Displacement Device for Curved Escalators (6.1.6.3.14).	8.6.8.15.22	
Seismic Detection Device	8.6.8.15.23	

**Additional Requirements:** For requirements on **annual brake testing of escalators and moving walks**, refer to [Safety Order: Escalator and Moving Walk Brake and Start-up Requirements](#)

## G. Platform Lifts and Stair Lifts for Barrier Free Access (Lifts for Persons with Physical Disabilities)

Table 6 below lists the required periodic tests for platform lifts and stair lifts for barrier free access (i.e., lifts for persons with physical disabilities) outlined in Annex B the CSA B355 Code, which is adopted mandatory in BC. For details, refer to Section B.4 of the Annex B.

All parts and functions of a lift, including those covered by Clause B.4, shall be examined and tested at intervals no longer than 12 months, unless otherwise specified.

Table 6. Summary of required periodic testing for Lifts for Persons with Physical Disabilities

Device	Clause	Frequency (minimum)
All Parts and Functions	B.4.1	12 months, unless otherwise specified below.
Safeties	B.4.2.1, B.4.2.2	
Failure Protection (circuits or parts)	B.4.3.1	
Governor Tripping Speed	B.4.3.2	12 months
Wire Ropes	B.4.4	Wire ropes inspection: 12 months Governor ropes inspection: 6 months Chain suspension examination: 12 months
Landing and Carriage Doors or Gates	B.4.5	6 months (inspection)
Driving Machine Brakes	B.4.6	12 months (Examine and test)
Carriage Emergency Lighting Test	B.4.7	6 months (Test)
Alarm and Warning Signal	8.3	6 months
Audiovisual Warning Signal	8.3	6 months
Automatic Levelling	8.2.4	6 months
Chair Carriage Rotation	7.43	6 months
Emergency Battery Backup System	8.3	6 months
Emergency Moving of Carriage	6.1.4	6 months
Foldable Seat	7.6.6	6 months
Levelling Tolerances	8.2.4	6 months
Operating Devices	8.2	6 months
Power-Assisted Swing Doors or Gates	5.2.1.2	6 months
Pressure Switch	6.6.8	12 months
Sensitive Edges and Surfaces	7.2.4	6 months
Speed-Limiting Devices	6.6.5	12 months
Repairs and Replacement	B.6	
Screw and Nut Drives	B.7	
Rack and Pinion Drives	B.8	
Chain and Chain Sprocket Drive	B.9	
Rope Chain and Rope Sprocket Drive	B.10	

**Note:** Where there is a conflict between this document and the EDSR, the EDSR will prevail.

**References:**

[Safety Standards Act](#)

[Elevating Devices Safety Regulation](#)

[Safety Standards General Regulation](#)

ASME A17.1-2016/CSA B44-16 Safety Code for Elevators and Escalators

CSA Standard B355-09 Lifts for persons with physical disabilities

[Directive D-L4 101125 4: Mandatory maintenance](#)

[Directive D-ED 2021-01: Approval of alternative testing for category 5 testing](#)

[Directive D-ED 2020-03: Elevating Devices Maintenance Record Requirements](#)

[Directive D-ED 2020-02: Annual Contractor Reporting](#)

[Safety Order SO-L1 110225 4: Driving Machine Brake - Electric Elevators](#)

[Safety Order SO-ED 2018-01: Escalator and Moving Walk Brake and Start-up Requirements](#)

[Safety Order SO-ED 2014-01: Mandatory requirements for removing elevating devices from service](#)

[Information Bulletin IB-ED 2020-04: Firefighters' Emergency Operation Testing Requirements](#)

[Information Bulletin IB-ED 2020-02: Maintenance and Testing Requirements](#)

[Information Bulletin IB-ED 2017-01: Elevating Devices incident and hazard reporting](#)