**Canadian Elevator Contractors Association Maintenance Control Program**

**Electric, Hydraulic, Dumbwaiter Devices**

**A Plan and Procedure Document to Maintain Equipment in Compliance with 8.6**

**ASME 17.1/CSA B44 2022**



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Purpose, Safety Message and Other Notes

# Purpose

This Maintenance Control Program (MCP) Document shall be constructed with the intent to provide service personnel with the required information to maintain, adjust, repair or replace any component of the prescribed elevator system for which it has been designed. It shall include but not limited to safety procedures to guide the service personnel in performing these tasks such as shutdowns, lockout, securing equipment or counterbalancing.

This document is to be maintained on the physical site of the elevating device for which it has been constructed and shall be made available to registered service personnel, Authorities Having Jurisdiction, Owners and their representatives.

The MCP Document is to include information specific to all components of the elevating system including maintenance and cleaning procedures, troubleshooting procedures, repair and replacement procedures and information pertaining to A17.1/ B44 Code and relevant AHJ documentation, required parameters and frequencies. Please refer to your AHJ for any local jurisdiction code modifications.

When constructing this document all attempts shall be made to legally obtain Original Equipment Manufacturer (OEM) maintenance and service manuals. Where OEM manuals are unavailable the constructor of this MCP Document shall include its own best practices, procedures based on history and experiences. These shall be documented and included as part of this MCP.

# Safety Message

The intent of the Maintenance Control Program is to provide Owners and service personnel with information to keep elevating equipment reliable and prescribe maintenance and repair procedures that will maximize the safety for service and maintenance mechanics and the traveling public, when interacting with the device.

With ever changing technology involving newer elevating devices and thousands of older elevating devices still in existence it has become increasingly difficult for service personnel to keep up with all the different types of equipment, technology and corresponding code requirements. This document is intended to provide elevating device mechanics with specific information about the elevating device equipment, while continuously being revised to ensure all information enclosed is current. The MCP document acts as a device to ensure elevating device mechanics have pertinent information to perform tasks safely, effectively and most importantly correctly to keep all concerned as safe as possible.

# Appendix A: Disclaimer

By downloading from CECA’s website any or all of CECA’s MCP Guidelines and Procedures I acknowledge, understand and accept the Terms, Conditions and Limitations set out below regarding CECA’s Notice and Disclaimer of Liability Concerning its MCP Guidelines and Procedures for Elevators (Hydraulic and Electric) and for Escalators, Moving Walks and Dumbwaiters.

|  |
| --- |
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# Template for Maintenance Program Tasks and Category Tests

**The following legend and template is used in this document to record maintenance tasks:**

**Legend: E** – ELECTRIC ELEVATORS **H** – HYDRAULIC ELEVATORS **D** – DUMBWAITERS

**Template for Maintenance Program Task**

|  |  |  |  |
| --- | --- | --- | --- |
| **Task Name** | Template Task Requirement Number and Name | **Scope:** | **E, H, D** |
| **Notes** | Special instruction | | |
|  | **Program Procedures** | | |
|  | Procedure and sub-requirements | | |
|  | **Frequency** | | |
|  | Recommended or mandated frequency of the task | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Relevant publications available to elevator personnel and AHJ’s to evaluate requirements | | |

**Template for Category Testing**

|  |  |  |  |
| --- | --- | --- | --- |
| **Test** | CAT X- 8.6.X Test Name | **Scope:** | **E, H, D** |
| **Notes** | Special instruction | | |
|  | **Test Procedure** | | |
|  | See Item XX in A17.2, or script testing requirements | | |

# MCP Updates

A17.1/B44 requirement 8.6.1.2.1(b) requires that the MCP document shall be updated accordingly where a maintenance task or procedure has been updated, or examinations or tests have been updated or revised to the extent that the MCP is reflective of the equipment at the specified location.

# Instructions for Locating a Remote ONSITE MCP:

**8.6.1.2.1(d) where the MCP is maintained remotely from the machine room, machinery space, control room, or control space (see 8.11.1.8) instructions for on-site locating or viewing the MCP either in hard copy or in electronic format shall be posted on the controller or at the means necessary for test (see 2.7.6.4). The instructions shall be permanently legible with characters a minimum of 3 mm (0.125 in) in height.**

|  |
| --- |
| ****INSTRUCTION FOR LOCATING THE MAINTENANCE CONTROL PROGRAM**** |
| **The Maintenance Control Program for this elevating device,**  **as required by A17.1/B44 Section 8.6**  **is being maintained in a REMOTE ON SITE LOCATION.**  **The MCP for this device can be found ON SITE at**  **Specify location:** |

# On-site Documentation

As required by A17.1/B44-2019 Section 8.6.1.2.2 Elevating Device owners shall have the following available onsite for reference by elevator personnel:

* Up-to-date wiring diagrams
* Procedures for inspections and tests not described in ASME A17.2
* Procedures specifically identified in the Code as required to be written.
  + Elastomeric buffers.
  + E/E/PES function as intended.
  + Two-way communication means.
  + Elevator leveling speed with open doors.
  + Hydraulic elevator overspeed valve.
  + Escalator reversal stopping device.
  + Escalator handrail retarding force.
  + Evacuation procedures for elevators by authorized persons and emergency personnel.
  + Cleaning of a car and hoistway transparent enclosures by authorized persons.
* Unique maintenance procedures or methods required for inspection, tests, and replacement of SIL rated E/E/PES electrical protective devices and circuits.
* Unique maintenance procedures or methods required for inspection, tests, and replacement of equipment applied under alternative arrangements.
* 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)
* 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.
* Unique Software Identifier(s) (USI(s)) of the executable software as applicable.
* The documentation for the engineering test of skirt panels deflection for units installed or altered under A17.1-2019 and later editions.
* 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 A17.1-2011 and later editions (see 8.3.XX.5)
* procedures for inspections, maintenance, replacements, adjustments, and repairs for escalator\moving walk dynamic braking means (See I-15, 6.1.5.3.4)

# Record Retention

The maintenance and testing records associated with this device are required to be retained for a period of not less than 5 years. See 8.6.1.4.1 (b) and (d).

# Call Backs and Trouble Calls

Call-backs and/or trouble call logs shall be maintained for a period of 1 year and must be made available to the AHJ upon request. These logs are not required to be maintained at this site.

8.6.1.4.2 includes requirements for: Instructions on how to report any need for corrective action (trouble calls) to the responsible party shall be posted on the controller or at the means necessary for test (see 2.7.6.4). The instructions shall be permanently legible with characters a minimum of 3 mm (0.125 in.) in height.

|  |
| --- |
| ****REPORTING OF TROUBLE CALLS**** |
| **This Elevating Device is being Maintained by**  **ABC Elevator**  **Please Report any problems to**  **555-555-5555**  **For Emergencies call 911** |

# Safe Operation and Device Maintenance

The following A17.1/B44 requirements shall be observed, always:

* **8.6.1.6 General Maintenance Methods and Procedures**
* **8.6.1.6.1 Making Safety Devices Inoperative or Ineffective.**

No person shall at any time make inoperative or ineffective any device on which safety of users is dependent, including any electrical protective device, except where necessary during tests, inspections (see 8.10 and 8.11), maintenance, repair, and replacement, provided that the installation is first removed from normal operation. Such devices shall be restored to their normal operating condition in conformity with the applicable requirements prior to returning the equipment to service (see 2.26.7 and 8.6.1.6).

# Repairs

Repairs shall be made with parts of at least equivalent material, strength, and design (see A17.1/B44 section 8.6.3.1). Replacements shall be made with parts of at least equivalent material, strength, and design. A record of Repairs and/or replacements shall be recorded and kept on site for the following repair / replacement activities:

1. Repairs (8.6.2.1- 8.6.2.5) including repairs of components and devices listed in 8.6.4, 8.6.5, 8.6.6, 8.6.7, 8.6.8, 8.6.9, and 8.6.10.
2. Replacements (8.6.3.1 - 8.6.3.11 except 8.6.3.7 and 8.6.3.10) including replacements of components and devices listed in 8.6.4, 8.6.5, 8.6.6, 8.6.7, 8.6.8, 8.6.9, and 8.6.10.
3. Other Records not previously covered: A17.6 10.1.1(c) – replacement criteria for less than 8 mm ropes as applicable.
4. 8.6.11.10 – Examination after Shutdown Due to Traction Loss
5. 8.6.11.14 – Examination after Shutdown Due to Broken-Suspension-Member Detection Means

# Guide for Inspection of Elevators, Escalators and Moving Walks

1. Unique procedures for the maintenance, inspection and test of; SIL rated devices, unique equipment, and conformance to Code Compliance Documents obtained for an A17.7 certificate shall be provided in the MCP as required.
2. Any reference to an item (e.g. Item 2.31.2) is a reference to a procedure identified in the current version of ASME 17.2 Guide for the inspection of elevators, escalators, and moving walks.
3. Code harmonization occurred in the A17.1/B44 2000 edition. References in A17.2 prior to harmonization may not match requirements in earlier editions of the B44 code however, it can be used as a guideline.

# Electrical Protective Safety Devices

For all safety devices identified in 2.26.2, Table 2.26.4.3.2, 6.1.6, 6.2.6 or devices provided to meet ASME A17.7 shall be maintained in accordance with manufacturer’s recommendations.

Part 1- Inside Car Maintenance Procedures

|  |  |  |  |
| --- | --- | --- | --- |
| **Task Name** | 8.6.4.13.1(c) Door reopening device | **Scope:** | **E, H** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Test and verify safe and proper operation of: | | |
|  | Door reopening devices; | | |
|  | Door open buttons; | | |
|  | Electric eyes; | | |
|  | Safety edges; | | |
|  | Electronic detectors. | | |
|  | Ensure that manually operated safety edges lead the closing car and/ or hall door. | | |
|  | **Frequency** | | |
|  | Mandated interval not exceeding 6 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 1.1 Door re-opening device. | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Task Name** | 8.6.4.13.1(d) Vision panels and grills | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Examine vision panels and grills for: | | |
|  | Wear and tear; | | |
|  | Breakage and cracks; | | |
|  | Seals; | | |
|  | Visibility. | | |
|  | **Frequency** | | |
|  | Mandated interval not exceeding 6 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 1.11 Car vision panels and glass car doors. | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Task Name** | 8.6.4.13.1(g) Astragals and resilient members, door space guards, and sight guards | **Scope:** | **E, H, D** |
| **Notes** | Where required | | |
|  | **Program Procedures** | | |
|  | Check Astragals and resilient members: | | |
|  | Check for wear and tear; | | |
|  | Ensure that they are not broken; | | |
|  | Check that they are properly fastened to the door. | | |
|  | Check door space guards, and sight guards: | | |
|  | Check for wear and tear; | | |
|  | Ensure that they are not broken; | | |
|  | Check that they are properly fastened to the door. | | |
|  | **Frequency** | | |
|  | Mandated interval not exceeding 6 months | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 4.2.1(b)(2) | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Task Name** | 8.6.4.13.1(i) Clutches, engaging vanes, retiring cams and engaging rollers | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Prove, verify and examine for safe and proper operation. | | |
|  | Verify alignment and engagement of devices. | | |
|  | Verify that hall and car doors cannot be separated: | | |
|  | Facing open door, obstruct the landing door at the middle third of travel; | | |
|  | Ensure separation does not occur. | | |
|  | **Frequency** | | |
|  | Mandated interval not exceeding 6 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Task Name** | 8.6.4.13.2 Kinetic Energy and Force Limitation for Automatic Closing, Horizontal Sliding Car and Hoistway Doors or Gates | **Scope:** | **E, H** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Kinetic Energy: Verify that the closing time in the code zone is not less than the minimum closing time shown on the door operator data plate (normal speed and reduced speed as applicable). Note: Where on-site information is not available see Closing Time for Horizontal sliding doors in non-mandatory appendix z, mass and closing time of horizontally sliding elevator doors. | | |
|  | Door Force: Verify that the closing force does not exceed 30 lbf (133 N). Follow the test procedure in A17.2. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Section: 1.8.2 Kinetic Energy. | | |
|  | Section: 1.8.1 Force Limitation. | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Task Name** | 8.6.4.15 Car Emergency System (Lighting) | **Scope:** | **E, H** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Examine lighting to ensure that they are securely fastened. | | |
|  | Verify that fixtures and bulbs are guarded. | | |
|  | Verify that at least two lamps are provided. | | |
|  | Verify that lighting supplied by batteries is operational. | | |
|  | Verify that emergency lighting is operational as installed. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 1.5.1(b) Car Lighting and Receptacles | | |

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| **Task Name** | 8.6.4.15 Car Emergency System (Ventilation) | **Scope:** | **E, H** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | If installed, verify that mechanical ventilation is properly guarded and adequately supported and is in operating condition. | | |
|  | Check that natural ventilation is open and functioning, | | |
|  | For observation cars exposed to direct sunlight that are provided with forced air ventilation, verify proper operation. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 1.14.1 Ventilation | | |

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| **Task Name** | 8.6.4.15 Emergency System (Communication) | **Scope:** | **E, H** |
| **Notes** | Emergency operation of signalling devices (See A17.1/B44– 2019 2.27.1.1.2 and 2.27.1.1.3). | | |
| **1** | **Program Procedures** | | |
|  | Communication: | | |
|  | Verify operation of two-way communication within the car; | | |
|  | Verify operation of lobby rescue station, where applicable; | | |
|  | Verify operation of location announcement, when applicable. | | |
| **2** | **Frequency** | | |
|  | Recommended interval not exceeding 12 months. | | |
|  | Note: Owners are advised to complete these checks on a more frequent basis than noted. | | |
| **3** | **A17.2 or Other Reference Requirements** | | |
|  | Item: 1.6.1 | | |

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| **Task Name** | 8.6.4.15 Emergency System (Emergency Operation of Signaling Devices) | **Scope:** | **E, H** |
| **Notes** | Emergency operation of signaling devices (See A17.1/B44 – 2019 2.27). | | |
| **1** | **Program Procedures** | | |
|  | Verify that alarm buttons are functional: | | |
|  | Where an emergency stop button is provided; verify function of audible signal. | | |
| **2** | **Frequency** | | |
|  | Recommended interval not exceeding 3 months. | | |
|  | Note: Owners are advised to complete these checks on a more frequent basis than noted. | | |
| **3** | **A17.2 or Other Reference Requirements** | | |
|  | Item: 1.6.1 | | |

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| **Task Name** | 8.6.4.16 Stopping Accuracy | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Check levelling as follows: | | |
|  | When automatic levelling is provided, check floor levelling and accuracy of stopping in both directions of travel; | | |
|  | Where inching buttons are provided test them to determine that they will operate the car only within the zone allowed by code. | | |
|  | Investigate levelling complaints with building personnel. | | |
|  | Verify proper friction brake operation. | | |
|  | Verify proper controlled levelling speed operation where possible and applicable. | | |
|  | Observe the machine room heat/ humidity environment that affects the friction brake operation. | | |
|  | Due to the limitations of the design of single speed equipment large levelling variations are normal and to be expected, the owner should educate and train the building occupants and users about this risk. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 3 months. | | |
|  | Note: Owners are advised to complete these checks on a more frequent basis than noted above. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 1.3.1.1 Operating Control Devices | | |

Part 2 - Machine Room Maintenance Procedures

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| **Task Name** | 8.6.1.6.3 Controllers wiring and wiring diagrams | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Clean controllers and drive cooling fan (do not blow out dust). | | |
|  | Temporary wiring and insulators or blocks in the armatures or poles of magnetically operated switches, contactors, or relays on equipment in service **is prohibited**. | | |
|  | Check elevator operation including acceleration, deceleration, and stop. | | |
|  | Check and tighten all screws in controller and terminal blocks. | | |
|  | Check fuses and fuse rating (fuses replaced with wire are not permitted). | | |
|  | Jumpers shall not be stored in the machine room or control spaces. | | |
|  | Check for up-to-date wiring diagrams. | | |
|  | Check mechanical interlock of the main contactors, where applicable. | | |
|  | Substitution of any wire or current-carrying device for the correct fuse or circuit breaker in an elevator circuit **is not permitted.** | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 2.10 Number of Elevators, Machines, Controllers, Disconnects. | | |
|  | Item: 2.12.1.1 Controller Wiring, Fuses, Grounding. | | |
|  | Item: 2.12.1.2 Hydraulic. | | |
|  | Elevator Industry Field Employees’ Safety Handbook, section 6. | | |

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| **Task Name** | 8.6.4.6 Brakes (Brake and Emergency Brake) | **Scope:** | **E, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Run the car Up and Down and check the operation of the brakes. | | |
|  | Inspect the following items (including proper lubrication or free operation): residual pads, linings and lift (ie running clearance), pins and levers, springs, sleeves and guide bushings, disc and/or drum, brake coil and plunger. | | |
|  | Verify the brake will stop and hold an empty car. | | |
|  | Check brake for pad contamination, Repair or replace as required and perform testing per 8.6.4.20.4 | | |
|  | Check emergency brake for pad contamination, Repair or replace as required and perform testing per 8.6.4.20.11 | | |
|  | Before returning the elevator to service, if any part of the driving machine brake is changed or adjusted that can affect the holding or decelerating capacity, a test complying with 8.6.4.20.4 shall be performed. | | |
|  | Before returning the elevator to service, if any part of the driving machine emergency brake is changed or adjusted that can affect the holding or decelerating capacity a test complying with 8.6.4.20.11 shall be performed. | | |
|  | **Frequency** | | |
|  | Mandated interval not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 2.17. Drive Machine Brake. | | |
|  | Item 2.43 Emergency brake, ascending car overspeed, and unintended car movement protection. | | |

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| **Task Name** | 8.6.4.8 Machinery spaces, machine rooms, control spaces and control rooms | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Floor shall be kept free of water, dirt, rubbish, oil and grease. | | |
|  | Flammable liquids having flash point of less than 44 degree C shall not be kept in machine room. | | |
|  | Machinery spaces and control spaces shall not be used for storage purposes. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 2.5 Housekeeping. | | |
|  | Item: 2.4.1 (b) | | |
|  | Item: 2.4.3.1 | | |

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| **Task Name** | 8.6.4.12 Governors | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Check that all governor seals are intact. | | |
|  | Governors shall be operated manually to verify free operation of all parts including switches and those parts which impart pull through tension to the governor rope. | | |
|  | Verify that all sheave moving parts are operating freely. | | |
|  | Check all electrical wiring connections. | | |
|  | Check all governor switch contacts. | | |
|  | Governor wire ropes shall not be lubricated. | | |
|  | **Frequency** | | |
|  | Mandated interval not exceeding 6 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 2.13.1.1 Governor, Overspeed Switch, and Seal. | | |
|  | Item: 2.13.3 | | |

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| **Task Name** | 8.6.4.17 Ascending car over speed and Unintended car movement protection (Rope Gripper) | **Scope:** | **E** |
| **Notes** | **For other device types, see device specific instructions that must be included in the MCP.** | | |
|  | **Program Procedures** | | |
|  | Check gripper brake pins to determine whether they are lubricated and not frozen. | | |
|  | Verify that emergency brake is clean and free from grease, oil and debris. | | |
|  | Check brake linings for wear. | | |
|  | Check the oil level in the hydraulic reservoir and check for any oil leaks. | | |
|  | When power is restored, the rope gripper must be reset. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item 2.43.1 | | |
|  | Item 2.19 of A17.1/B44 Ascending Car Overspeed and Unintended Car Movement Protection. | | |

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| **Task Name** | 8.6.4.21 Drive Sheaves with non-metallic groove surfaces and steel wire ropes | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Check non-metallic drive sheave groove surface. If the surface is damaged, the liners and possibly the sheave will need to be replaced. | | |
|  | **Frequency** | | |
|  | Mandated interval not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 2.25. Traction Sheaves. | | |

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| **Task Name** | 8.6.4.22 Maintenance of Seismic Devices | **Scope:** | **E, H** |
| **Notes** | Check seismic detection device and counter-weight displacement detection device. | | |
|  | **Program Procedures** | | |
|  | See device specific instructions. | | |
|  | **Frequency** | | |
|  | Recommended not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 1.20 | | |
|  | Item: 3.34 | | |

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| **Task Name** | 8.6.5.4 Tank level | **Scope:** | **H** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | The level of oil in the oil tanks shall be checked and where necessary, adjusted to comply with the prescribed minimum and maximum level. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 3 months. For single bottom cylinders recommended interval not exceeding one month. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 2.39. Low Oil Protection. | | |
|  | 8.6.5.8 requires replacement of all single bottom cylinders or addition of safeties or plunger gripper. | | |

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| **Task Name** | 8.6.5.7 Record of Oil Usage | **Scope:** | **H** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Where all or part of a cylinder and piping is not exposed for visible examination, a written record shall be kept of the quantity of hydraulic fluid added to the system and emptied from the leakage collection container and pan. | | |
|  | A written record shall be kept in the machine room. | | |
|  | When the quantity of hydraulic fluid loss cannot be accounted for, perform the test specified in: | | |
|  | 8.6.5.14.1. Relief valve setting and system pressure category (1); | | |
|  | 8.6.5.14.2. Hydraulic cylinder and pressure piping category (1). | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding three months. | | |
|  | Recommended interval for single bottom cylinders not to exceed one month. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 2.36 Hydraulic Cylinders. | | |
|  | Item: 2.40.1.1. Maintenance Records. | | |

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| **Task Name** | 8.6.5.9 Relief valve setting | **Scope:** | **H** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | The relief valve adjustment shall be examined to ensure that the seal is intact. If the relief valve seal is not intact testing is required in accordance with 8.6.5.14.1. | | |
|  | **Frequency** | | |
|  | Recommended not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 2.31.1 Relief Valves | | |
|  | Item: 2.31.3 | | |

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| **Task Name** | 8.6.5.12 Anti-creep and Low Oil Protection | **Scope:** | **H** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Verify anti-creep function. | | |
|  | Verify Low oil protection function. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 2.39 for low oil protection. | | |
|  | Item: 3.7 Car Leveling and Anti-creep Devices. | | |

Part 3 - Top of Car Maintenance Procedures

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| **Task Name** | 8.6.4.1 Suspension & Compensating Means | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Suspension & Compensating means shall be checked for cleanliness, lubrication and equal tension. | | |
|  | Examine compensating means and fastenings for excessive wear, damage, or deterioration. | | |
|  | Verify conformance with A17.6: | | |
|  | For conventional rope - Utilize rope gauge for normal wear and/or ropes showing rouge; | | |
|  | Conventional rope less than 8 mm with rouge must be replaced; | | |
|  | For conventional rope refer to A17.6 table 1.10 for number of breaks per lay under favorable and unfavorable wear conditions. | | |
|  | **Frequency** | | |
|  | Mandated not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 3.22 Wire Rope Fastening and Hitch Plate. | | |
|  | Item: 3.23 Suspension Rope. | | |
|  | Item: 3.24 Top Counterweight Clearance. | | |
|  | Item: 5.10 Compensating Chain, Ropes, and Sheaves. | | |
|  | A17.6 Section: 1.10 Replacement Criteria for Steel Wire Ropes and Tables in section 1.10. | | |
|  | A17.6 Section: 2.9 Replacement Criteria for Aramid Fibre. | | |
|  | A17.6 Section: 3.7 Replacement Criteria for Noncircular Elastomeric Coated Steel suspension members. | | |

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| **Task Name** | 8.6.4.2 Governor Wire Ropes | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Governor Wire Ropes shall be checked for cleanliness. | | |
|  | Governor Wire Ropes shall not be lubricated. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 3.20.1. Governor Rope. | | |

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| **Task Name** | 8.6.4.3 Lubrication of Guide Rails | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Lubrication shall be in accordance with the requirements on the cross-head data plate if provided. | | |
|  | Guide rails shall be kept lubricated, except for those of elevators equipped with roller or other types of guiding members not requiring lubrication. | | |
|  | Where type B safeties are used, the guide rail lubricants shall be the one recommended by the safety manufacturer. | | |
|  | If lubricants other than those recommended by the safety manufacturer are used, a safety test shall be performed to demonstrate proper safety function as per 2.17.3 (A17.1). | | |
|  | Rails shall be kept clean and free of lint and accumulation of dirt. | | |
|  | Means shall be provided at the base of the rails to collect excess lubricant. | | |
|  | Rust preventive compounds such as paint shall not be applied to the guiding surface. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 3 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 3.19.1. Guide Rails Fastening and Equipment. | | |
|  | Item: 3.19.2 | | |

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| **Task Name** | 8.6.4.7 Cleaning of Hoistways | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Hoistways and pits shall be kept free of dirt, rubbish and shall not be used for storage purposes of any nature. Water and oils shall not be allowed to accumulate on pit floors and pit access doors shall be kept closed and locked. | | |
|  | Pit access doors shall be kept closed and locked. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 2.5. Housekeeping. | | |
|  | Item: 1.12(j) | | |

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| **Task Name** | 8.6.4.9 Cleaning of Car Top | **Scope:** | **E, H, D** |
| **Notes** | The tops of cars shall be kept free of oil, water, dirt, and rubbish, and shall not be used for storing lubricants, spare parts, tools, or other items. | | |
|  | **Program Procedures** | | |
|  | Clean the car top or verify cleanliness in accordance with 8.6.4.9. | | |
|  | **Frequency** | | |
|  | Recommend interval not exceeding 6 months or as conditions apply. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 2.5.1. Housekeeping. | | |

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| **Task Name** | 8.6.4.10 Refastening or Resocketing of Drum Machines. | **Scope:** | **E, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Refasten the car fastening onto new rope as per refastening procedure - see device specific procedure. | | |
|  | Inspect the counterweight fastening for fatigue or damage at the socket (if applicable). | | |
|  | Install or update the refastening data tag. | | |
|  | **Frequency** | | |
|  | Mandated interval: Never for 2:1 roping. | | |
|  | Mandated interval: Not exceeding 12 months for overhead machines. | | |
|  | Mandated interval: Not exceeding 24 months for side mounted or basement machines. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 3.22.1.2. Wire Rope Fastening and Hitch Plate. | | |
|  | Item: 2.20 | | |

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| **Task Name** | 8.6.4.13.1(a) Hoistway Door Interlocks or Mechanical Locks and Electric Contacts | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Check components for wear and alignment. | | |
|  | Check for positive locking action before the contact is made. | | |
|  | Verify that manually opening the interlock stops the elevator. | | |
|  | **Frequency** | | |
|  | Mandated interval not exceeding 6 months. | | |
|  | MAC Interlocks are to be serviced as per manufacturers` instructions. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 3.17.1. Door and Gate Equipment. | | |
|  | Item: 4.2 | | |
|  | Item: 4.4 | | |

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| **Task Name** | 8.6.4.13.1(b) Car Door Electric Contacts or Car Door Interlocks | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Check components for wear and alignment. | | |
|  | Check for positive locking action before the contact is made (where required). | | |
|  | Verify that manually opening the interlock or contact stops the elevator. | | |
|  | **Frequency** | | |
|  | Mandated interval not exceeding 6 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 3.17.1. Door and Gate Equipment. | | |

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| **Task Name** | 8.6.4.13.1(f) Hangers, tracks, door rollers, up-thrusts and door safety retainers | **Scope:** | **E, H, D** |
| **Notes** | Where required. | | |
|  | **Program Procedures** | | |
|  | Check components for excessive wear and proper alignment. | | |
|  | **Critical Procedure:** Set up-thrust for “minimum” running clearance and ensure that locking nuts are tight. | | |
|  | **Critical Procedure:** Examine door safety retainers for clearances proper sill penetration and secure fastening. | | |
|  | Verify proper operation (where provided). | | |
|  | **Frequency** | | |
|  | Mandated interval not exceeding 6 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 3.17 Door and Gate Equipment. | | |
|  | Item: 1.7 | | |

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| **Task Name** | 8.6.4.13.1(h) Sills and bottom guides, fastenings, condition and engagement | **Scope:** | **E, H** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Verify proper sill penetration and check for secure fastenings. | | |
|  | Check for wear and tear. | | |
|  | Ensure that the back of the sill is clear of dirt and debris. | | |
|  | **Frequency** | | |
|  | Mandated interval not exceeding 6 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 3.17.1.6(b)(1). Door and Gate Equipment. | | |
|  | Item: 1.4 | | |

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| **Task Name** | 8.6.4.13.1(j) Interconnecting means | **Scope:** | **E, H, D** |
| **Notes** | **These are Critical Examinations** | | |
|  | **Program Procedures** | | |
|  | Examine interconnection to the panels of multi-section doors. | | |
|  | Verify secondary means are functioning properly (where provided). | | |
|  | Check for excessive wear and tear or damage; | | |
|  | Check for proper tension on relating devices. | | |
|  | **These are Critical Examinations** | | |
|  | **Frequency** | | |
|  | Mandated interval not exceeding 6 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 3.17.1(b) 2. Door and Gate Equipment. | | |

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| **Task Name** | 8.6.4.13.1(k) Door closers | **Scope:** | **E, H, D** |
| **Notes** | Where required. | | |
|  | **Program Procedures** | | |
|  | Prove, verify and examine for safe and proper operation. | | |
|  | Stop door in three locations to verify self closing: fully open, halfway open and 50 mm from closed. | | |
|  | Verify that the doors return to the fully closed and locked position. | | |
|  | **Frequency** | | |
|  | Mandated interval not exceeding 6 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 3.17.1(b) 3. Door and Gate Equipment. | | |

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| **Task Name** | 8.6.4.13.1(l) Door restrictors | **Scope:** | **E, H** |
| **Notes** | Where required. | | |
|  | **Program Procedures** | | |
|  | Prove, verify and examine for safe and proper operation. | | |
|  | Determine that the locking member is in a position to lock the door when or before the gate contact is made. | | |
|  | When outside of the door zone, ensure that the car and hall doors cannot be opened more than 100 mm. | | |
|  | **Frequency** | | |
|  | Mandated interval not exceeding 6 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 3.17.1(c). Door and Gate Equipment also Item 1.18 Restricted Opening of Car or Hoistway Doors. | | |
|  | Item: 1.18 | | |

Part 4 - Outside Hoistway Maintenance Procedures

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| **Task Name** | 8.6.4.13.1(e) Hoistway door unlocking devices and escutcheons | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Verify proper operation (where provided). | | |
|  | **Frequency** | | |
|  | Mandated interval not exceeding 6 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 4.5.1(a) Unlocking devices. | | |

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| **Task Name** | 8.6.4.14 Hoistway access switches | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Verify that the switches function properly where provided. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 6 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 4.5.1(b). Access to Hoistway. | | |

Part 5 - Pit Maintenance Procedures

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| **Task Name** | 8.6.4.4 Oil Buffers | **Scope:** | **E, H** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Maintain oil level with the proper grade of oil. | | |
|  | Keep plungers clean and not painted. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 12 months (Note: this is not the Category 5 Oil Buffer test). | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 5.9. Buffer and Emergency Terminal Speed Limiting Devices. | | |
|  | Item: 5.12. Car Buffer. | | |

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| **Task Name** | 8.6.4.4.2 Elastomeric Buffers | **Scope:** | **E, H, D** |
| **Notes** |  | | |
| **1** | **Program Procedures** | | |
| 1.1 | Verify for any life-cycle conditions that may affect buffer performance or any other condition specified by the manufacturer. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 12 months. | | |

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| **Task Name** | 8.6.4.5 Safety Mechanisms | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Safety mechanism shall be kept lubricated and free of rust, corrosion and dust that can interfere with the operation of the safety. | | |
|  | Following a test of the car safety mechanism a visual inspection must be carried out to ensure the safety mechanism has not been changed during testing and that all moving parts have been returned to their natural position and the necessary clearances between the safety jaws and the car guide rails are maintained. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 5.8.1.1. Car and Cwt Safeties and Guiding Members. | | |
|  | Item: 2.29 Car and Counterweight Safeties. | | |

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| **Task Name** | 8.6.4.7 Cleaning of Pits | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Check for cleanliness. | | |
|  | Check for accumulation of oil or water. | | |
|  | Check for overflow of rail lubricant pans. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 5.1.1. Pit Access, Lighting, Stop Switch, and Condition. | | |

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| **Task Name** | 8.6.4.11 Runby | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | With the elevator level with the top terminal landing, verify the distance from the top of the buffer to the contact point on the counterweight does not exceed the value marked on the Counterweight Runby Data Plate and never exceed a maximum of 900 mm (35 in.). (see A17.1 section 1.3 definitions Runby). | | |
|  | With the car parked at the bottom terminal landing, verify the distance from the top of the buffer to the contact point on the car plus the stroke of the buffer do not exceed 600 mm (24 in.). | | |
|  | If the counterweight strikes the buffer when at the top terminal landing, ensure it is compressed by less than 25% of the stroke. | | |
|  | If stools are removed to adjust the overall length of the counterweight, ensure top of car clearances are not affected. | | |
|  | When hoistropes are first shortened, ensure the month and year is recorded on the rope data tag. | | |
|  | **Frequency** | | |
|  | 12 months, as needed following rope replacement or shortening. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item 5.2 | | |
|  | A17.1/B44- 8.6.4.11, 8.6.5.10, 2.4.2, 2.4.3, 2.4.4 & 2.4.5, 3.4.2, 3.4.3, 3.4.6, 7.1.4, 7.4.6 | | |

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| **Task Name** | 8.6.4.18 Compensation Sheaves and Switches | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Verify that the compensation sheave is not nearing the upper or lower limit of travel. | | |
|  | Check that the compensation sheave switches do not actuate during normal operation. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 5.10. Compensating Chain, Ropes, and Sheaves. | | |

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| **Task Name** | 8.6.5.5 Gland Packings and Seals | **Scope:** | **H** |
| **Notes** |  | | |
| **1** | **Program Procedures** | | |
|  | Check packings and seals for excessive oil loss. | | |
|  | Maximum oil container size is 19 L. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 3 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 5.11.1.2. Plunger and Cylinder. | | |

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| **Task Name** | 8.6.5.6 Flexible Hose and Fittings | **Scope:** | **H** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Flexible hoses to be replaced every 6 years if no overspeed valve conforming to 3.19 provided. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 3 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 2.34 Flexible Hoses and Fitting Assemblies. | | |

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| **Task Name** | 8.6.5.11 Cylinder Corrosion Protection and Monitoring | **Scope:** | **H** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Check corrosion protection monitoring means and repair if required (where applicable). | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 12 months. May be extended with other mitigating factors such as low oil timer, plunger gripper, etc. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | None. | | |

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| **Task Name** | 8.6.5.13 Overspeed Valve Setting | **Scope:** | **H** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | All elevators provided with field adjustable over speed valves shall have the adjustment means examined to ensure that the seal is intact. | | |
|  | If the over speed adjustment seal is not intact, ensure compliance with 8.6.5.16.5 Category (5) and install a new seal on the device. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 5.15 Overspeed Valve. | | |
|  | See A17.1/B44-2019 3.19.4.7.5(a). | | |

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| **Task Name** | 8.6.5.17 Plunger Gripper | **Scope:** | **H** |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Perform maintenance and testing per manufacturer guidelines | | |
|  | **Frequency** | | |
|  | Mandated interval not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | See A17.1/B44-2019 8.10.3.2.5(n) | | |

8.6.11 Special Provisions – Maintenance Checks

The provisions in 8.11 typically apply to the equipment owner/operator, not the maintenance company. However, as stated in the preface, ASME A17.1/CSA B44 does not assign responsibility. Responsibility to comply with the Code is typically assigned by the authority having jurisdiction. The owner/operator is ultimately responsible.

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| **Task Name** | 8.6.1.6.7 Signs and Data Plates | **Scope:** | **E, H, D** |
| **Responsibility** | Contractor | | |
| **Notes** | Required signs and data plates that are damaged or missing shall be repaired or replaced. | | |
|  | **Program Procedures** | | |
|  | Confirm commonly used Data plates as required: | | |
|  | Runby, door operator tag, capacity plates, freight elevator signs, crosshead data plates, suspension means tags. | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | Item: 2.5 Housekeeping. | | |

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| **Task Name** | 8.6.11.1 Firefighter’s Emergency Operation | **Scope:** | **E, H** |
| **Responsibility** | Owner | | |
| **Notes** | This procedure verifies a minimum set of checks to ensure the primary features utilized by firefighters and emergency personnel are functional. | | |
|  | **Program Procedures** | | |
|  | Check for availability of the key used to initiate recall of elevators. Available to only authorized, emergency and elevator personnel. A separate key shall be provided for each switch. | | |
|  | Recall the elevator to the recall level by use of the Phase 1 recall switch located in the lobby of the designated landing. | | |
|  | Verify that the same key can be used to initiate Phase 2 operation in the car. | | |
|  | Verify that the in-car Fire Operation switch functions as follows:  (Switch should be marked as either: “OFF-ON” or “OFF-HOLD-ON”) | | |
|  | Verify that constant pressure of the car door buttons (in both the open and close directions) is required to complete a full door open or full door close sequence.  Where no door close button is provided constant pressure of a floor button is permitted. | | |
|  | Verify Phase 2 operation (by use of the in-car fire operation switch) by running the elevator a minimum of one floor (buildings with several floors should be tested over more floors). | | |
|  | Upon arrival at a floor, operate the doors. Confirm operation as required in Item 5. Also verify that during closing obstruct any electronic door opening device to ensure it is rendered ineffective. | | |
|  | Register a Call: When in the “ON” position floor selection is established by means of registering a car call and closing of the doors by means of the door close button or where no door close button is provided, constant pressure of the floor selection means. | | |
|  | Confirm ‘security restricted’ floors are overridden when running the elevator on Phase 2. | | |
|  | Cancel a Call:   * Cancellation of car calls is by momentary use of the “HOLD” position; * Where there is no “HOLD” position, in a two-position switch, momentary use of the “OFF” position shall cancel car calls; * When provided, the ‘Cancel Call’ button shall cancel car calls. | | |
|  | When in the “HOLD” position with the car at a landing other than the recall level and the doors in the fully open position, a car call may not be registered, and the car door shall not be able to close. | | |
|  | When in the “OFF” position and the car is at a landing other than the recall level, the doors shall close automatically and when the doors reach the fully closed position, the car shall return automatically as if on ‘Phase I recall’ to the designated landing or the recall level. | | |
|  | **Frequency** | | |
|  | Mandated interval not exceeding 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | A17.1/B44 Section 8.6.11.1 | | |

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| **Task Name** | 8.6.11.2 Two-Way Communication Means | **Scope:** | **E, H** |
| **Responsibility** | Owner | | |
| **Notes** | The two-way communications means shall be checked annually by authorized personnel. | | |
|  | **Program Procedures** | | |
|  | Verify two-way communication is established. | | |
|  | Verify the visual signal indicator is functioning to indicate help is on the way (for B44-02). | | |
|  | Verify the answering personnel can identify the building location and the elevator number (for B44-02). | | |
|  | Verify that two-way communications into the car is functioning. | | |
|  | Verify the answering personnel have video display to observe passengers in the car (for B44-19). | | |
|  | **Frequency** | | |
|  | Recommended interval not exceeding 3 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | See 8.6.11.2 in A17.1/B44 | | |

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| **Task Name** | 8.6.11.3 Access Keys | **Scope:** | **E, H, D** |
| **Responsibility** | Owner | | |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Check to ensure keys required for access, operation, inspection, maintenance, repair, and emergency access shall be made available only to personnel in the assigned security level, in accordance with 8.1 of A17.1/B44-2019. | | |
|  | Key(s) used to access or operate elevator, escalator, moving walk, dumbwaiter, and material lift equipment shall conform to the following: | | |
|  | Keys used to open any other lock in the building shall not access or operate the devices classified as Security Group 1, 2, 3, or 4; | | |
|  | The same key shall be permitted to access or operate all the devices within only one assigned group (see 8.1.2, 8.1.3, 8.1.4, or 8.1.5), and not those in any other group except as indicated in 8.1.1(c); | | |
|  | The keys for Group 1 devices shall also be permitted to operate Group 2, 3, and 4 devices. The keys for Group 2 devices shall be permitted to operate Group 3 and 4 devices; | | |
|  | Keys shall be kept on the premises in a location readily accessible to the personnel in the assigned group, but not where they are accessible to the public; | | |
|  | Elevator personnel shall have access to all assigned groups: | | |
|  | **8.1.2 Group 1: Restricted** | | |
|  | Group 1 covers access or operation of equipment restricted to elevator personnel, except as noted. **NOTE**: See the following: | | |
|  | Requirement 2.2.4.4(e), pit access doors; | | |
|  | Requirement 2.7.3.4.6, access openings in machinery space floor, etc.; | | |
|  | Requirement 2.7.3.4.7(c), hoistway access doors; | | |
|  | Requirement 2.7.5.1.4, equipment access panels; | | |
|  | Requirement 2.7.6.3.2(b), motor controller cabinet door(s) or panel(s); | | |
|  | Requirement 2.7.6.4.3(b), access to the means to move the car from outside the hoistway; | | |
|  | Requirement 2.7.6.4.3(d), access to removable means to move the car from outside the hoistway; | | |
|  | Requirement 2.7.6.5.2(b), inspection and test panel enclosure; | | |
|  | Requirement 3.19.4.4, access to a manual lowering valve; | | |
|  | Requirement 3.19.4.5, access to pressure gauge fittings; | | |
|  | Requirement 2.11.1.2(h), emergency access doors **(shall also be made available to emergency personnel during an emergency)**; | | |
|  | Requirement 2.12.6.2.4, hoistway door unlocking device **(shall also be made available to emergency personnel during an emergency)**; | | |
|  | Requirement 2.12.7.2.2, hoistway access switch; | | |
|  | Requirement 2.12.7.3.3, hoistway access enabling switch or its locked cover; | | |
|  | Requirement 2.26.1.4.3(b), in-car inspection operation transfer switch; | | |
|  | Requirement 2.26.2.21, in-car stop switch or its locked cover; | | |
|  | Requirement 4.2.5.2, screw machine controllers located away from hoistway, machine room, or machinery space; | | |
|  | Requirement 4.2.5.5, screw machine access panels; | | |
|  | Requirement 5.1.10.1(b), inclined elevator hoistway access switch; | | |
|  | Requirement 5.1.11.1.2(d), inclined elevator uphill end emergency exit; | | |
|  | Requirement 5.7.8.3, hoistway door unlocking device; | | |
|  | Requirement 7.1.12.4, power and hand dumbwaiters without automatic transfer devices hoistway access switch; | | |
|  | Requirement 7.9.2.15, electric material lifts with automatic transfer devices car-mounted operating devices. | | |
|  | **8.1.3 Group 2: Authorized Personnel** | | |
|  | Group 2 covers access or operation of equipment by authorized and elevator personnel. **NOTE:** See the following: | | |
|  | Requirement 2.7.3.4.2, machine room and control room access doors; | | |
|  | Requirements 2.7.3.4.3 and 2.7.3.4.4, machinery spaces and control spaces as specified; | | |
|  | Requirement 2.11.1.4, access openings for cleaning of car and hoistway enclosures; | | |
|  | Requirement 2.14.2.6(b), access openings for cleaning of car and hoistway enclosure; | | |
|  | Requirement 2.14.7.2.1(b), car light control switch or its locked cover; | | |
|  | Requirement 3.19.4.1, access to manually operated shutoff valve; | | |
|  | Requirement 5.6.1.25.2(b), rooftop elevator keyed operation switch; | | |
|  | Requirement 6.1.6.2.1(d), escalator starting switch; | | |
|  | Requirement 6.1.7.3.3, escalator side access door to interior; | | |
|  | Requirement 6.2.6.2.1(d), moving walk starting switch; | | |
|  | Requirement 6.2.7.3.3, moving walk side access door to interior. | | |
|  | **8.1.4 Group 3: Emergency Operation** | | |
|  | Group 3 covers access or operation of equipment by emergency, authorized, and elevator personnel. **NOTE**: See the following: | | |
|  | Requirements 2.27.2.4.1 and 2.27.8, emergency or standby power access selector switch; | | |
|  | Requirements 2.27.3.1.1 and 2.27.8, Phase I emergency recall operation switch; | | |
|  | Requirements 2.27.3.3 and 2.27.8, Phase II emergency in-car operation switch; | | |
|  | Side emergency exit doors on existing equipment. | | |
|  | **Frequency** | | |
|  | Recommended interval of document verification every 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | A17.1/B44 Section: 8.1 and other above referenced A17.1 /B44 Sections | | |

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| **Task Name** | 8.6.11.4 Cleaning of Hoistway Transparent Enclosures | **Scope:** | **E, H** |
| **Responsibility** | Owner | | |
| **Notes** | This procedure applies for observation style elevators. Authorized personnel assigned to clean must be given copies of the procedure and must be trained in the procedure. | | |
|  | **Program Procedures** | | |
|  | A written procedure shall be made and posted onsite and available to the AHJ. Include instructions for authorized personnel to remove power from the elevator. | | |
|  | The procedure shall include hazards and safety precautions to be followed when working in the hoistway. | | |
| 1.3 | All personnel assigned to clean the hoistway and clear enclosures shall be provided a copy of the procedure. | | |
| 1.4 | A record of authorized personnel shall be kept and made available to the AHJ. | | |
| **2** | **Frequency** | | |
| 2.1 | Recommended interval of document verification every 12 months. | | |
| **3** | **A17.2 or Other Reference Requirements** | | |
| 3.1 | Refer to 8.6.11.4 of A17.1/B44 for code requirements. | | |

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| **Task Name** | 8.6.11.5 Emergency Evacuation Procedures for Elevators | **Scope:** | **E, H** |
| **Responsibility** | Owner | | |
| **Notes** | This document covers passenger rescue by trained and qualified Elevator Field Employees. | | |
|  | **Program Procedures** | | |
|  | **The mechanic telephones the building representative and:** | | |
|  | Confirms the location of the car and that there are passenger(s) trapped in the car; | | |
|  | Instructs the building representative to contact them if there is any change in the status of the entrapment; | | |
|  | Provides a realistic time of arrival; | | |
|  | Requests that someone greets the mechanic at the front door with the necessary keys on hand to show the mechanic to the problem car. | | |
|  | **Mechanics Assessment of the Site** | | |
|  | Open one of the lower landings on the malfunctioning elevator (that has lunar key access) to estimate the location of the car. Complete a visual check of the pit equipment from the landing. Understand the hall interlock arrangement and test your ability to pick the lock, should you need it at the landing where the car has stopped; | | |
|  | Access the hoist way landing door above where the car has stopped; | | |
|  | If necessary, calm the trapped passenger(s) and determine if a medical condition exists; | | |
|  | If the mechanic determines that passenger(s) are seriously injured, call 911. If an incident or injury occurs in connection with an elevating device, immediately notify your supervisor/ manager. Your AHJ may require notification; | | |
|  | The mechanic will explain to the trapped passenger(s) that noise will be caused, along with movement before they are evacuated from the car (i.e. mechanic stepping on the top of car, moving car, etc.). These actions will prevent passenger(s) from panic and further stress; | | |
|  | Movement of the car when there are passenger(s) is only permitted when the mechanic can see the car, or the mechanic is in constant communication with someone (i.e. a second mechanic, the building representative, or the fire department) observing the car; | | |
|  | The mechanic will use the car top stop to control the car; | | |
|  | Inspect the car gate to ensure nothing is damaged. Ensure there are no obstructions and the car gate is closed; | | |
|  | Evaluate the condition of the trapped passenger(s). The mechanic will ask the passengers for the direction and noises heard before the car stopped. Ask the passenger(s) if they are physically mobile and can step up or down from the car if needed. If passenger(s) use a wheelchair or walker, they won’t be able to negotiate the difference in floor level, let them know you must try to get the car closer to the landing, at that time they will be assisted out of the elevating device; | | |
|  | Assure the passenger(s) that their safety is not in jeopardy; | | |
|  | Evaluate the condition of electrical and mechanical elements by physically looking for applied safety brakes, damaged hall/ gate locks, damage to door gibs, etc. The mechanic will take the information provided by the passenger(s) into consideration during these checks. | | |
|  | **Operating the Car** | | |
|  | Operate the car from the car top inspection station and move the car to a relatively even position to the landing sill; | | |
|  | Re-secure the car by engaging the stop button; | | |
|  | Operate the door operator wheel by hand to reveal a little of the landing and ask the passenger(s) if the sills are close. If the level is easy to negotiate, the passengers can exit the car, but remind them to watch their step and to wait until you tell them to exit the car; | | |
|  | When the doors are fully open, ask the passenger(s) to watch their step and inform them they may now exit the car. | | |
|  | **Car Stuck Above Floor** | | |
|  | If the apron **completely** covers the hoistway opening and the passenger(s) are physically able to negotiate the distance, the mechanic may evacuate the passenger(s) by opening the doors manually. Instruct the passenger(s) to wait until you tell them to exit the car. You may need to go to the landing to assist the passenger(s) (it may require opening the door from the car top and walking down to the landing). If passenger(s) are not physically able to negotiate the distance between the car and the landing, or the car has stopped too high for the car apron to cover the opening, inform the trapped passenger(s) that you need to attempt to diagnose the problem from another area and may be out of communication with them for a period of time. Do not move the car unless there is communication with the passenger(s) in the car. Ask the building representative or a second Elevating Device Mechanic (EDM) to keep in direct contact with the passenger(s), while remaining in constant contact with the building representative or EDM (using 2-way radios or cell phone communication). Proceed to the machine room and attempt to correct the problem. Never attempt to run the car from the machine room with jumpers to by-pass door circuits with passenger(s) trapped in the car. Ask the building representative to keep in direct contact with the passenger(s), while remaining in direct contact with the building representative (using 2-way radios or cell phone communication). | | |
|  | **Unable to Open the Car Doors** | | |
|  | Contact the second area on-call mechanic; | | |
|  | Disconnect, lockout and tag the power to the car and door operator; | | |
|  | With the hall door slightly open determine if the apron is completely blocking the hoist way. Address any gap. | | |
|  | **Running the Car from the Machine Room** | | |
|  | Do not use the hoistway or car door bypass without a second mechanic on-site to put the car on inspection as passenger(s) may open the doors and try climbing out with the car running; | | |
|  | If unable to place on car top inspection, remove power to the return wire terminal of the car top inspection station switch. Verify the power is off with the position of the relay responsible for inspection (fail safe position); | | |
|  | With the second mechanic positioned at the landing to which the passenger(s) are evacuating, and keeping in constant communication with the second mechanic, the passenger(s) may now be evacuated; | | |
|  | Only move the elevator enough to allow for the safe evacuation of the passenger(s) if you have full control of the car. | | |
|  | **Car Evacuation through the Car Top** | | |
|  | Evacuation of the car through the car top occurs when the car is unable to move and the car is between floors that are not serviced by a hall door at that level; | | |
|  | Contact the fire department and the second area on-call mechanic and request an elevator extraction. Inform the fire department that an elevator mechanic is on site, the elevator is under control and the passenger(s) are in no danger. Inform the fire department “Assistance is required to safely evacuate passenger(s) from the stranded car”. Provide the fire department with assistance as required; | | |
|  | Make a survey of hazards so they may be pointed out when emergency services arrive. | | |
|  | **Other Scenarios** | | |
|  | If a situation arises where the mechanic is uncertain of the corrective action to take, their immediate Supervisor shall be telephoned. | | |
|  | **Frequency** | | |
|  | Recommended interval of document verification every 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | See also A17.4 Guide for Emergency Personnel. | | |

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| **Task Name** | 8.6.11.7 Operating Instructions for engaging the Unexpected Car Movement Protection Device (Means specified in A17.1/B44 2.7.5.1.1) | **Scope:** | **E, H** |
| **Responsibility** | Owner | | |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | See device specific procedure | | |
|  | **Frequency** | | |
|  | Recommended interval of document verification every 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
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| **Task Name** | 8.6.11.8 Egress and Re-entry Procedure from Working Areas | **Scope:** | **E, H, D** |
| **Responsibility** | Owner | | |
|  | **Notes** | | |
|  | This document covers car locking devices for qualified Elevator Field Employees. Some machine-room-less elevators are equipped with special car movement locking devices that provide an independent method of securing the car. The cartop can then safely be used for performing maintenance, inspection, adjustments, or repairs to overhead equipment. | | |
|  | **Program Procedures** | | |
|  | Inside Hoistway | | |
|  | Ensure elevator suspension is in place; | | |
|  | A car top light and stop switch must be provided; | | |
|  | Set the emergency stop button to stop; | | |
|  | Set the inspection switch to INSPECT position; | | |
|  | Attempt to run the car from car top to test car top stop function; | | |
|  | Return the STOP switch to the run position; | | |
|  | Using the car top inspection buttons move the car to the rail lock device location (this device is typically located on the crosshead); | | |
|  | Engage rail lock and return the STOP button to the stop position; | | |
|  | **Rail Locks MUST be engaged before maintaining or inspecting machine brake or emergency brake.** | | |
|  | **Frequency** | | |
|  | Recommended interval of document verification every 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | See A17.1/B44 Section: 8.6.11.6. | | |

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| **Task Name** | 8.6.11.9 Operating Instruction for Retractable Platforms (where provided) | **Scope:** | **E, H** |
| **Responsibility** | Owner | | |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | See device specific procedures. | | |
|  | **Frequency** | | |
|  | Recommended interval of document verification every 12 months. | | |
|  | **A17.2 or Other Reference Requirements** | | |

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| **Task Name** | 8.6.11.11 Examination after Shutdown Due to Traction Loss | **Scope:** | **E** |
| **Responsibility** | Contractor | | |
| **Notes** | Where the traction-loss detection means has been actuated, the following checks shall be performed. | | |
|  | **Program Procedures** | | |
|  | Physical examination of the drive sheave. | | |
|  | Physical examination of suspension means. | | |
|  | Any conditions which could adversely affect traction shall be corrected before returning to service. | | |
|  | **Frequency** | | |
|  | As needed. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | See 8.6.11.11 of A17.1/B44. | | |

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| **Task Name** | 8.6.11.12 Examination after Safety Application | **Scope:** | **E, H, D** |
| **Responsibility** | Contractor | | |
| **Notes** | Where the safety device has been actuated, **whether due to testing or during normal service**, the following checks shall be performed: | | |
|  | **Program Procedures** | | |
|  | Examine the driving machine. | | |
|  | Examine all sheaves. | | |
|  | Examine all rope retainers and suspension members throughout their FULL Length to ensure: | | |
|  | Ropes are properly seated; | | |
|  | No damage has occurred to sheaves, suspension members, or retainers. | | |
|  | The elevator shall not be returned to service until this physical examination has been conducted and any required repairs have been made. | | |
|  | **Frequency** | | |
|  | At each safety set. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | See 8.6.11.12 of A17.1/B44. | | |

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| **Task Name** | 8.6.11.13 Occupant Evacuation Operation (OEO) | **Scope:** | **E, H, D** |
| **Responsibility** | Contractor | | |
| **Notes** | All elevators provided with Occupant Evacuation Operation shall be subjected, by authorized personnel, to a check of the operation in conjunction with the fire alarm system testing in accordance with the requirements of NFPA 72. **As of January 1, 2022, there are no elevators in Canada with OEO.** | | |
|  | **Program Procedures** | | |
|  | Deficiencies shall be corrected. | | |
|  | A record of findings shall be available to elevator personnel and the authority having jurisdiction. | | |
|  | **Frequency** | | |
|  | At each safety set. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | See 8.6.11.13 of A17.1/B44. | | |

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| **Task Name** | 8.6.11.14 Examination after Shutdown Due to Broken-Suspension Member Detection Means | **Scope:** | **E, H, D** |
| **Responsibility** | Contractor | | |
| **Notes** | After any application of the broken-suspension-member detection means, **whether due to testing or during normal service**, the following checks shall be made: | | |
|  | **Program Procedures** | | |
|  | Examine the driving machine sheave. | | |
|  | Examine all other sheaves. | | |
|  | Examine all rope retainers and suspension members throughout their FULL Length to ensure: | | |
|  | Ropes are properly seated; | | |
|  | No damage has occurred to sheaves, suspension members, or retainers. | | |
|  | The elevator shall not be returned to service until this physical examination has been conducted and any required repairs have been made. | | |
|  | Where a single suspension member has been damaged or broken, the entire suspension means shall be replaced. | | |
|  | **Frequency** | | |
|  | At each safety set. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | See 8.6.11.14 of A17.1/B44. | | |

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| **Task Name** | 8.6.11.15 Presence of Elevator Personnel when Motor Controllers are located in Public Spaces | **Scope:** | **E, H, D** |
| **Responsibility** | Contractor | | |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | Motor controller doors shall be closed and locked when mechanic is not present. | | |
|  | **Frequency** | | |
|  | At all times. | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | See 2.7.6.3. of A17.1/B44. | | |

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| **Task Name** | 8.6.11.16 RIO | **Scope:** | **E, H** |
| **Responsibility** | Owner | | |
| **Notes** |  | | |
|  | **Program Procedures** | | |
|  | When changes are made to secured access floor(s) through RIO (Remote Interactive Operation). | | |
|  | Changes shall be provided to authorized personnel. | | |
|  | Records shall be kept in hard copy or electronically for 5 years and made be available to the AHJ. | | |
|  | **Frequency** | | |
|  | At all times | | |
|  | **A17.2 or Other Reference Requirements** | | |
|  | See 8.6.11.16 of A17.1/B44. | | |

Category 1 - Periodic Test Procedures

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| **Test** | CAT 1- 8.6.4.19.1 Oil Buffers | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Test Procedure** | | |
|  | See A17.2 Items 5.9.2.1(a), 5.12 | | |

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| **Test** | CAT 1- 8.6.4.19.2 Safeties | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | See A17.2 Items 2.29.2, 5.8.2. Also verify the operation of the safety operated switch. | | |

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| **Test** | CAT 1- 8.6.4.19.3 Governors | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | See A17.2 Items 2.13.3, 2.13.2.2 | | |

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| **Test** | CAT 1- 8.6.4.19.4 Slack-Rope Devices in Winding Drum | **Scope:** | **E, D** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | See A17.2 Items 2.20.2.1 | | |

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| **Test** | CAT 1- 8.6.4.19.5 Normal and Final Terminal Stopping Device | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | See A17.2 Items 2.28.2, 3.5.2, 3.6.2 | | |

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| **Test** | CAT 1- 8.6.4.19.6 Firefighter’s Emergency Operation | **Scope:** | **E, H** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
| 1.1 | Refer to Special Provisions Section 8.6.11.1 of this MCP document, Part 6 of A17.2 | | |

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| **Test** | CAT 1- 8.6.4.19.7 Standby or Emergency Power | **Scope:** | **E, H** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | See A17.2 Item 1.17.2.1 | | |

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| **Test** | CAT 1- 8.6.4.19.8 Power Operation of Door System | **Scope:** | **E, H** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | See A17.2 Item 1.8.2. Also see Appendix z. | | |

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| **Test** | CAT 1- 8.6.4.19.9 Broken Rope, Tape, or Chain Switch | **Scope:** | **E, H** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | See A17.2 Item 3.26.1 | | |

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| **Test** | CAT 1- 8.6.4.19.10 (Electric) 8.6.5.14.10 (Hydraulic) Functional safety of SIL Rated device(s). | **Scope:** | **E, H** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | As required by the manufacturer and/or an ASME A17.7/CSA B44.7 Code Compliance Document (CCD). | | |

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| **Test** | CAT 1- 8.6.4.19.11 ACO Examination and Test | **Scope:** | **E** |  |
| **Notes** |  | | |
|  | **ACO Examination and Test** | | |
|  | All working parts of ascending car overspeed protection device shall be examined to determine that they are in satisfactory operating condition. | | |
|  | Ascending car overspeed protection shall be subjected to tests with no load in the car at the slowest operating speed in the up direction. Observe car speed is reduced. | | |
|  | Item 2.43.2. | | |

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| **Test** | CAT 1- 8.6.4.19.11 UCM Examination and Test | **Scope:** | **E** |  |
| **Notes** |  | | |
|  | **UCM Examination** | | |
|  | All working parts of the unintended car movement device shall be examined to determine that they are in satisfactory operating condition. | | |
|  | Unintended car motion protection shall be subjected to tests with no load in the car at the slowest operating speed in the up direction. Observe activation. | | |
|  | Item 2.43.2. | | |

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| **Task Name** | CAT 1- 8.6.4.19.12 Traction-Loss Detection Means | **Scope:** | **E** |
| **Notes** | The maintenance of this is confirmed via annual testing. | | |
|  | **Program Procedures** | | |
|  | Cause relative motion between the drive sheave and the suspension means either by bottoming the car or counterweight and observe shut down to prove operation or follow the device specific method developed. | | |
|  | Item 3.23.2.1(c) | | |

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| **Task Name** | CAT 1- 8.6.4.19.13 Broken-Suspension Member and Residual Strength Detection Means | **Scope:** | **E** |
| **Notes** | The maintenance of this is confirmed via annual testing. | | |
|  | **Test Procedures** | | |
|  | The broken-suspension-member detection means shall be tested by simulating a slack suspension member or a loss of a suspension member as appropriate | | |
|  | Suspension-member residual-strength detection means shall be tested to simulate a reduction of residual strength | | |
|  | Item 3.23.2.1(a), 3.23.2.1(b) | | |

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| **Task Name** | CAT 1- 8.6.4.19.15 Emergency Communications | **Scope:** | **E, H** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | Items 1.6 Car Emergency Signal and 1.6.1 and 1.6.2 or see specific checkout procedure. | | |

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| **Task Name** | CAT 1- 8.6.4.19.16 Means to Restrict Hoistway or Car Door Opening | **Scope:** | **E, H** |
| **Notes** | Means to Restrict Hoistway or Car Door Opening shall be tested | | |
|  | **Test Procedures** | | |
|  | Means to restrict hoistway or car door opening shall be tested to determine conformance | | |
|  | Item: 1.18 Restricted Opening of Car or Hoistway Doors | | |

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| **Task Name** | CAT 1- 8.6.4.19.17 Earthquake Operations | **Scope:** | **E** |
| **Notes** |  | | |
| **1** | **Test Procedures** | | |
| 1.1 | Item: 1.20 | | |

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| **Test** | CAT 1- 8.6.4.19.18 (Electric) Door Reopening Device(s) | **Scope:** | **E** |
| **Notes** |  | | |
| **1** | **Test Procedures** | | |
| 11 | See A17.2 Item 1.1.2 | | |

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| **Test** | CAT 1- 8.6.4.19.19 Sequence Operation of Power Door Systems (vertical bi-parting) | **Scope:** | **E** |
| **Notes** |  | | |
| **1** | **Test Procedures** | | |
| 1.1 | See A17.2 Item 4.7.2 | | |

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| **Test** | CAT 1- 8.6.4.19.20 (Electric) and 8.6.5.14.9 (Hydraulic) Testing of Alternative Arrangements and ASME A17.7/CSA B44.7 – Conforming Equipment | **Scope:** | **E, H** |
| **Notes** |  | | |
| **1** | **Test Procedures** | | |
| 1.1 | As required by the manufacturer and/or an ASME A17.7/CSA B44.7 Code Compliance Document (CCD). | | |

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| **Test** | 8.6.4.19.21 (Electric) and 8.6.5.14.12 (Hydraulic) System to Monitor and Prevent Automatic Operation of the Elevator with Faulty Door Circuits | **Scope:** | **E, H** |
| **Notes** |  | | |
| **1** | **Test Procedures** | | |
| 1.1 | A written test procedure shall be provided as part of the on-site documentation and demonstrates that the elevator meets the applicable requirements of 2.26.5 | | |

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| **Task Name** | CAT 1 - 8.6.5.14.1 Relief Valve Verification of Setting and System Pressure Test | **Scope:** | **H** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | Item: 2.31.2 | | |

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| **Task Name** | CAT 1 - 8.6.5.14.2 Hydraulic Cylinders and Pressure Piping | **Scope:** | **H** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | Item: 2.36.2 | | |

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| **Task Name** | CAT 1 - 8.6.5.14.3(a) | **Scope:** | **H** |
| **Notes** | This is 1 of 10 Tests are listed under additional tests. | | |
|  | **Test Procedures** | | |
|  | Normal Terminal Stopping Devices | | |
|  | See 8.6.4.19.5 | | |
|  | Item: 3.5.2 | | |
|  | Item: 2.28 | | |

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| **Task Name** | CAT 1 - 8.6.5.14.3(b) | **Scope:** | **H** |
| **Notes** | This is 1 of 10 Tests are listed under additional tests. | | |
|  | **Test Procedures** | | |
|  | Governors | | |
|  | See 8.6.4.19.3 | | |
|  | Item: 2.13.2.2 | | |

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| **Task Name** | CAT 1 - 8.6.5.14.3(c) | **Scope:** | **H** |
| **Notes** | This is 1 of 10 Tests are listed under additional tests. | | |
|  | **Test Procedures** | | |
|  | Safeties | | |
|  | See 8.6.4.19.2 | | |
|  | Item: 5.8.2 | | |

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| **Task Name** | CAT 1 - 8.6.5.14.3(d) | **Scope:** | **H** |
| **Notes** | This is 1 of 10 Tests are listed under additional tests. | | |
|  | **Test Procedures** | | |
|  | Oil Buffers | | |
|  | See 8.6.4.19.1 | | |
|  | Item: 5.12 | | |

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| **Task Name** | CAT 1 - 8.6.5.14.3(e) | **Scope:** | **H** |
| **Notes** | This is 1 of 10 Tests are listed under additional tests. | | |
|  | **Test Procedures** | | |
|  | Firefighters’ Emergency Operation | | |
|  | See 8.6.4.19.6 | | |
|  | Item: 6.1 thru 6.5 as applicable | | |

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| **Task Name** | CAT 1 - 8.6.5.14.3(f) | **Scope:** | **H** |
| **Notes** | This is 1 of 10 Tests are listed under additional tests. | | |
|  | **Test Procedures** | | |
|  | Standby or Emergency Power | | |
|  | See 8.6.4.19.7 | | |
|  | Item 1.17.2.2 | | |

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| **Task Name** | CAT 1 - 8.6.5.14.3(g) | **Scope:** | **H** |
| **Notes** | This is 1 of 10 Tests are listed under additional tests. | | |
|  | **Test Procedures** | | |
|  | Power Operation of Door System | | |
|  | See 8.6.4.19.8 | | |
|  | Item 4.6 | | |
|  | Item 4.7 | | |

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| **Task Name** | CAT 1 - 8.6.5.14.3(h) | **Scope:** | **H** |
| **Notes** | This is 1 of 10 Tests are listed under additional tests. | | |
|  | **Test Procedures** | | |
|  | Terminal Speed Limiting Device and Terminal Stopping Device | | |
|  | See 3.25.2 | | |
|  | Item 3.6.2.2 | | |

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| **Task Name** | CAT 1 - 8.6.5.14.3(i) | **Scope:** | **H** |
| **Notes** | This is 1 of 10 Tests are listed under additional tests. | | |
|  | **Test Procedures** | | |
|  | Low Oil Protection Operation | | |
|  | See 3.26.9 | | |
|  | Item 2.39.2 | | |

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| **Task Name** | CAT 1 - 8.6.5.14.3 (j) Auxiliary Power Lowering Device | **Scope:** | **H** |
| **Notes** | This is 1 of 10 Tests are listed under additional tests. | | |
|  | **Test Procedures** | | |
|  | Auxiliary Power Lowering Device | | |
|  | When power is removed from the controller the elevator will lower to the lowest landing. Turning of the main line disconnect should remove power, refer to job schematics to determine if auxiliary disconnect switch needs to be bypassed. | | |
|  | The car is allowed to stop at other landings if the lowering power is adequate. | | |
|  | Upon reaching the bottom landing the door is to open and close and the door open and close buttons are to remain active. | | |
|  | See 3.26.10 | | |
|  | Item 2.44.2 | | |

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| **Task Name** | CAT 1 - 8.6.5.14.4 Flexible Hose and Fitting Assemblies | **Scope:** | **H** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | Apply relief pressure to hose and fittings for 30 seconds. | | |
|  | Observe no damage, distortion or leakage. | | |
|  | Item: 2.34.1 | | |

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| **Task Name** | CAT 1 - 8.6.5.14.5 Pressure Switch | **Scope:** | **H** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | When Pressure Switch senses low pressure in the cylinder it removes power from lowering valve(s). The doors will not operate except by use of the Door Open button if in the Unlocking Zone. | | |
|  | See 3.26.8 | | |
|  | Item: 2.37 | | |

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| **Task Name** | CAT 1 - 8.6.5.14.6 Power Operation of Door System | **Scope:** | **H** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
| 1.1 | Item 1.8.1. See CAT 1 8.6.4.19.8. (see appendix z). | | |

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| **Task Name** | CAT 1 - 8.6.5.14.7 Slack-Rope Device | **Scope:** | **H** |
| **Notes** |  | | |
| **1** | Test Procedures | | |
| 1.1 | Item: 3.31.2 | | |

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| **Task Name** | CAT 1 - 8.6.5.14.8 Earthquake Operation | **Scope:** | **H** |
| **Notes** |  | | |
| **1** | Test Procedures | | |
| 1.1 | Item: 1.20 | | |

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| **Task Name** | CAT 1 - 8.6.5.14.11 Plunger Gripper | **Scope:** | **H** |
| **Notes** |  | | |
| **1** | Test Procedures | | |
| 1.1 | Item: 5.17.2 | | |

Category 3 - Periodic Test Procedures

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| **Task Name** | CAT 3 8.6.5.15.1 Unexposed Portions of Piston Rods | **Scope:** | **H** |
| **Notes** | Applies to roped water-hydraulic elevators only | | |
|  | **Test Procedures** | | |
|  | Piston rods of roped water-hydraulic elevators shall be exposed, thoroughly cleaned, and examined for wear or corrosion. | | |
|  | Item: 5.11.2 | | |

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| **Task Name** | CAT 3 8.6.5.15.2 Pressure Vessels | **Scope:** | **H** |
| **Notes** | Applies to hydraulic elevators with Pressure Tanks (Not typical Atmospheric Storage and discharge tanks) | | |
|  | **Test Procedures** | | |
|  | Item: 2.33.2 | | |

Category 5 - Periodic Test Procedures

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| **Task Name** | CAT 5 8.6.4.20.1 (CAT 5 8.6.5.16.1) Car and Counterweight Safeties (RATED LOAD) | **Scope:** | **E, D**  **(H)** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | Item: 2.29.2 | | |

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| **Task Name** | CAT 5 8.6.4.20.2 (CAT 5 8.6.5.16.1) Governors (Pull through force 8.6.4.20.2(b)) | **Scope:** | **E, D**  **(H)** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | Item: 2.13.2.1. Also, where Governor rope is replaced, pull through force to be checked and resealed, if necessary. | | |
|  | (Hydraulic Item 2.13.2.2) | | |

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| **Task Name** | CAT 5 8.6.4.20.3 (CAT 5 8.6.5.16.1) Oil Buffers (RATED LOAD / RATED SPEED) | **Scope:** | **E**  **(H)** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | Item: 5.9.2 | | |
|  | (Hydraulic Item: 5.12) | | |

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| **Task Name** | CAT 5 8.6.4.20.4 Driving Machine Brake(s) (RATED LOAD / RATED SPEED) | **Scope:** | **E, D** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | Item: 2.17.1 | | |

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| **Task Name** | CAT 5 8.6.4.20.6 Emergency Terminal Stopping and Speed Limiting Devices | **Scope:** | **E** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | Item: 2.28.2 | | |

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| **Task Name** | CAT 5 8.6.4.20.7 Power Opening of Doors | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | Item: 1.10.2 | | |

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| **Task Name** | CAT 5 8.6.4.20.8 Leveling Zone and Leveling Speed | **Scope:** | **E, H** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | Item: 1.10.2.1 | | |

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| **Task Name** | CAT 5 8.6.4.20.9 Inner Landing Zone | **Scope:** | **E, H** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | Item: 1.10.1 | | |

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| **Task Name** | CAT 5 8.6.4.20.10 Braking System, Traction and Traction Limits (RATED LOAD / RATED SPEED) | **Scope:** | **E, D** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | Item: 2.17.1 | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Task Name** | CAT 5 8.6.4.20.11 Emergency Brake / CAT 5 8.6.4.20.11(a) Emergency Brake and Ascending Car Overspeed Protection / CAT 5 8.6.4.20.11 (b) Emergency Brake and Unintended Car Movement Protection | **Scope:** | **E** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | Item: 2.43.3.1 Also see item 2.43 Table 2.43.3.1 | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Task Name** | CAT 5 - 8.6.5.16.2 Coated Rope Mag Flux Test | **Scope:** | **H, D** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | Item 3.23 | | |

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| --- | --- | --- | --- |
| **Task Name** | CAT 5 - 8.6.5.16.3 Wire Rope Fastenings | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | Item: 3.22 | | |

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| --- | --- | --- | --- |
| **Task Name** | CAT 5 - 8.6.5.16.4 Plunger Grippers | **Scope:** | **H** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | Item: 5.17.2 | | |

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| --- | --- | --- | --- |
| **Task Name** | CAT 5 - 8.6.5.16.5 Overspeed Valves | **Scope:** | **H, D** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | Item: 5.15.3.2 | | |

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| --- | --- | --- | --- |
| **Task Name** | CAT 5 - 8.6.5.16.6 Class C2 Freight Elevator Loaded Leveling Test | **Scope:** | **H** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | Item: 2.17.2 | | |

Category 5 – ALTERNATIVE Periodic Test Procedures

|  |  |  |  |
| --- | --- | --- | --- |
| **Task Name** | CAT 5 8.6.4.20.1 Car and Counterweight Safeties (ALTERNATIVE TEST) | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | See site specific procedure. | | |

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| --- | --- | --- | --- |
| **Task Name** | CAT 5 8.6.4.20.3 Oil Buffers (ALTERNATIVE TEST) | **Scope:** | **E, H, D** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | See site specific procedure. | | |

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| --- | --- | --- | --- |
| **Task Name** | CAT 5 8.6.4.20.4 Driving Machine Brake(s) (ALTERNATIVE TEST) | **Scope:** | **E, D** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | See site specific procedure. | | |

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| --- | --- | --- | --- |
| **Task Name** | CAT 5 8.6.4.20.10 Braking System, Traction and Traction Limits (RATED LOAD / RATED SPEED) (ALTERNATIVE TEST) | **Scope:** | **E, D** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | See site specific procedure. | | |

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| --- | --- | --- | --- |
| **Task Name** | CAT 5 8.6.4.20.11 Emergency Brake / CAT 5 8.6.4.20.11(a) Emergency Brake and Ascending Car Overspeed Protection / CAT 5 8.6.4.20.11 (b) Emergency Brake and Unintended Car Movement Protection (ALTERNATIVE TEST) | **Scope:** | **E, D** |
| **Notes** |  | | |
|  | **Test Procedures** | | |
|  | See site specific procedure. | | |

ASME A17.1-2019/B44-19 NONMANDATORY APPENDIX Z

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**NONMANDATORY APPENDIX Z**

**MASS AND CLOSING TIME OF HORIZONTALLY SLIDING**

**ELEVATOR DOORS**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table Z-1 Mass and Closing Time of Horizontally Sliding Elevator Doors** | | | | | | | | | | | |
| SI Units | | | | | | | | | | | |
|  | Single-Speed Doors | | |  | Center-Opening Doors | | |  | Two-Speed Side-Opening Doors | | |
|  |  | *Door Close Time, t* | |  |  | *Door Close Time, t* | |  |  | *Door Close Time, t* | |
| Door Opening, mm | Mass, kg | At Normal Speed, s | At Reduced Speed, s |  | Mass, kg | At Normal Speed, s | At Reduced Speed, s |  | Mass, kg | At Reduced Speed, s | At Reduced Speed, s |
| 915 x 2130 | 140–185 | 2.3–3.3 | 3.9–5.5 |  | . . . | . . . | . . . |  | . . . | . . . | . . . |
| 1070 x 2130 | 160–215 | 2.9–3.9 | 4.9–6.6 |  | 190–225 | 1.5–2.6 | 2.6–4.4 |  | 170–230 | 2.5–3.5 | 5.0–6.0 |
| 1220 x 2130 | . . . | . . . | . . . |  | 220–250 | 1.9–2.9 | 3.2–4.9 |  | 190–255 | 3.0–4.0 | 5.1–6.5 |
| Imperial Units | | | | | | | | | | | |
|  | Single-Speed Doors | | |  | Center-Opening Doors | | |  | Two-Speed Side-Opening Doors | | |
|  |  | Door Close Time, *t* | |  |  | Door Close Time, *t* | |  |  | Door Close Time, *t* | |
| Door Opening, in. | Weight, lbf | At Normal Speed, s | At Reduced Speed, s |  | Weight, lbf | At Normal Speed, s | At Reduced Speed, s |  | Weight, lbf | At Reduced Speed, s | At Reduced Speed, s |
| 36 x 84 | 300–400 | 2.3–3.3 | 3.9–5.5 |  | . . . | . . . | . . . |  | . . . | . . . | . . . |
| 42 x 84 | 350–475 | 2.9–3.9 | 4.9–6.6 |  | 420–500 | 1.5–2.6 | 2.6–4.4 |  | 375–500 | 2.5–3.5 | 5.0–6.0 |
| 48 x 84 | . . . | . . . | . . . |  | 485–550 | 1.9–2.9 | 3.2–4.9 |  | 420–560 | 3.0–4.0 | 5.1–6.5 |

GENERAL NOTES:

(a) See 2.13.4.2.4, 8.6.3.8, 8.6.4.19.8, and 8.6.5.14.6.

(b) This Table was developed to assist in annual maintenance inspection, in accordance with Section 8.6, for which no data plate (see 2.13.4.2.4) is provided.

(c) The data provided in this Table are based on a survey of several Canadian manufacturers which provided information obtained from the early 1990’s and are intended to be used as a guideline only.

(d) The Table covers sheet steel doors with painted surfaces without cladding.

(e) Door close time, *t*, expressed in this Table as either normal speed or reduced speed, is the time to travel from a point 50 mm (2 in.) away from jamb to a point 50 mm (2 in.) away from the opposite jamb for side-opening doors. In the case of center-opening doors, time to travel is from a point 25 mm (1 in.) away from jamb to a point 25 mm (1 in.) from the center. This distance is referred to as the Code zone distance in 2.13.4.2.2.

(f) In the absence of actual minimum door close time from the manufacturer, use the upper time limit of the door-close-time range for adjustment and inspection purposes.

ASME A17.2-2014 TABLE 2.43.3.1

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|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 2.43.3.1 Traction Elevator Brake Type, Function, and Performance** | | | | | |
| Brake Type | Location | Normal Operation Function | Emergency Operation Function | Normal Performance (Minimum) | Emergency Performance (Minimum) |
| Driving-machine brake (see 1.3 and 2.24.8.3) | Electric driving machine (see 1.3 and 2.24.8.1) | To hold car stationary at floor [Note (1)] [see 2.24.8.3(a) and (b), and 2.26.8] | Retard car during emergency stop [see 2.24.8.3(c), 2.26.8.3(c), and (d)] | Hold 125% of rated load [Note (2)] [see 2.24.8.3(a)] | Retard empty car in up direction [see 2.24.8.3(c)] |
| Braking system (see 1.3 and 2.24.8.2) | Not specified | Note (1) (see 2.26.8) | Retard car during emergency stop [see 2.24.8.2 and 2.26.8.3(c) and | Note (1) | Safely stop and hold 125% of rated load in down direction [see Note (2)] (see 2.24.8.2 and (d)] 2.16.8) |
| Emergency brake (see 1.3 and 2.19.3) | Suspension or compensation means system, traction sheave, car, or counterweight (see 2.19.3.2) | Not permitted [see 2.19.3.2(c)] | Retard car during ascending car overspeed and unintended car movement, independently of the braking system [see 2.19.1.2(b) and 2.19.2.2(b)] | Not applicable [see 2.19.3.2(c)] | Retard car in up direction [see 2.19.3.2(a)], up to 110% of governor tripping speed [see 2.19.1.2(a)]. Stop unintended motion: 125% rated load down or empty car up [see Note (2)] [see 2.19.2.2(b)]. |

GENERAL NOTE: See 1.3, 2.16.8, 2.19, and 2.24.8

NOTES:

(1) It is permitted that the braking system or the driving-machine brake function in normal retardation of the elevator car.

(2) For freight elevators not permitted to carry passengers, test with 100% of rated load (see 2.16.8)

Local Jurisdiction Code Modifications

Local Jurisdiction Code Modifications Your Local Authority having Jurisdiction (AHJ) may have additional requirements. Please check with your AHJ and add any Program Maintenance Tasks or Category Testing requirements here or in the applicable spot in this MCP Document. An additional page has been incorporated into the MCP Logbook for this purpose.