DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS

DIRECTOR'S OFFICE

ELEVATORS

(By authority conferred on the director of the department of licensing and regulatory affairs by section 8 of 1967 PA 227, MCL 408.808, section 3 of 1976 PA 333, MCL 338.2153, and Executive Reorganization Order Nos. 1996-2, 2003-1, 2008-4 and 2011-4, MCL 445.2001, 445.2011, 445.2025, and 445.2030)

CHAPTER 1. GENERAL PROVISIONS

R 408.7001 Scope.

Rule 1. These rules establish administrative and operational procedures for implementation of the act and shall be known as the Michigan elevator rules. The rules establish, for protection of the general public, minimum safety requirements for inspection, construction, installation, alteration, maintenance, repair, and operation of elevators.

History: 2003 AACS; 2014 AACS.

R 408.7002 Definitions.

Rule 2. (1) As used in these rules:

(a) "Act" means 1967 PA 227, MCL 408.801 to 408.824.

(b) "Belt manlift" means a power-driven endless belt that has steps and handholds and is used to transport persons in a vertical direction through successive floors or levels of a building or structure.

(c) "Department" means the department of licensing and regulatory affairs.

(d) "Electrical-powered, 1-man elevator" means an elevator that has a car platform area of not more than 5 square feet, a rated load of not more than 300 pounds, and a rated speed of not more than 100 feet per minute. It is for the exclusive use of certain designated operating and maintenance employees and is installed in any of the following structures:

(i) A grain or feed mill.

(ii) A chemical or alcohol distillery.

(iii) A cement storage tower.

(iv) A radio tower.

(v) A similar structure that is not accessible to the general public.

(e) "Examination" means a survey of the design and construction of elevators or elevator equipment by a dealer in elevators or elevator equipment or an approved insurance company.

(f) "Hand-powered, 1-man elevator" means an elevator that has a car platform area of not more than 5 square feet, has a rated load of not more than 300 pounds, and is operated from the car only by pulling on a stationary rope that is located in the hoistway and passing

through or adjacent to the car platform. The elevator is for the exclusive use of certain designated operating and maintenance employees and is installed in a grain or feed mill or a similar structure that is not accessible to the general public.

(g) "Inspection" means the official determination by a general inspector of the condition of all parts of equipment on which the safe operation of an elevator depends.

(h) "Private residence elevator" means any elevating device installed in or at a private residence or installed in a building as a means of access to a private residence within such building, provided the elevator is installed so that it is not accessible to the general public or to other occupants in the building. The use is restricted to the owner and the owner's immediate family and nonpaying guests. All other elevating device installations must be classified as commercial.

(i) "Special elevating device" includes another lifting or lowering apparatus that is guided as provided in section 3 of the act, MCL 408.803.

(j) "Temporary inspection" means the inspection of a permanent elevator that is to be used on a temporary basis.

(k) “Maintenance” means the process of routine examination, lubrication, cleaning, and adjustment of parts components or subsystems, or both, to ensure performance pursuant to these rules and the American Society of Mechanical Engineers (ASME) A17.1.

(2) Terms defined in the act have the same meanings when used in these rules.

History: 2003 AACS; 2005 AACS; 2014 AACS; 2023 AACS.

R 408.7003 Applicability of national standards.

Rule 3. The following standards are adopted by reference.

(a) The following standards are available from the American Society of Mechanical Engineers (ASME), 22 Law Drive, Box 2900, Fairfield, New Jersey 07007-2900, https://www.asme.org, at a cost as of the time of adoption of these rules, as stated in this subdivision:

(i) ASME A17.1- 2016 safety code for elevators and escalators, except for sections, 1.2.1(b), 1.2.1(c), 2.5.1.5.3, 2.8.3.3.2, 2.8.6, 2.11.1.3, 2.11.1.4, 2.11.7.2, 2.11.7.2.1, 2.11.7.2.2, 2.11.7.2.3, 2.11.7.2.4, 2.11.7.2.5, 2.12.7.2.1(c), 2.12.7.2.2, 2.14.2.2(f), 2.14.2.6, 2.14.5.9.2, 2.22.2, 2.27.3.1.6(c), 3.18.3.8.3, 3.19.5.2, 3.22.1.6, 5.3.1.1.1, 5.3.1.1.2, 5.3.1.2.1, 5.3.1.14.3, 5.4.10.1, 5.4.10.2, 5.11, 5.12, 5.12.1, 5.12.1.1, 5.12.1.2, 5.12.1.3, 5.12.1.4, 5.12.2, 5.12.3, 8.6.1.7.1, 8.6.4.19.12 (b), 8.6.4.20.1(b), 8.6.4.20.1(b)(1), 8.6.4.20.1(b)(2), 8.6.4.20.3(a)(2), 8.6.4.20.3 (2)(b), 8.6.4.20.3 (g), 8.6.4.20.4 (b), 8.6.4.20.4 (b)(1), 8.6.4.20.4 (b)(2), 8.6.4.20.10(b), 8.6.4.20.10(b)(1), 8.6.4.20.10(b)(2), 8.6.5.8, 8.6.7.11 to 8.6.7.11.3, 8.6.7.12, 8.6.7.12.1, 8.6.7.12.2, 8.6.11.5 to 8.6.11.5.6, 8.6.11.10 to 8.6.11.10.4, 8.7.2.14.5.2, 8.10.1.1.3, 8.10.1.2, 8.11.1.1, 8.11.1.1.1, 8.11.1.1.2, 8.11.5.14 to 8.11.5.16. Cost $252.00.

(ii) ASME A17.2- 2017 guide for inspection of elevators, escalators, and moving walks. Cost $195.00.

(iii) ASME A17.3-2017 safety code for existing elevators and escalators. Cost $168.00.

(iv) ASME A17.6- 2017 standard for elevator suspension, compensation, and governor systems. Cost $92.00.

(v) ASME A18.1- 2017 safety code standard for platform lifts and stairway chairlifts, except for sections 2.1.2 to 2.1.2.8, 2.1.3 to 2.1.3.10, 3.10.2 to 3.10.2.4, 10.1.1, 10.1.2 to 10.1.2.3, 10.1.3.3, 10.1.4, and 10.2.1. Cost $98.00.

(vi) ASME A90.1-2009 safety standard for belt manlifts. Cost $59.00.

(b) ANSI A10.4-2016, the American National Standards Institute (ANSI), safety requirements for personnel hoist and employee elevators for construction and demolition and operations, except for sections 24.1.2.1 and 26.4.8.1, is available from ANSI at 1430 Broadway, New York, New York, 10018, https://www.ansi.org. Cost $110.00.

(c) The following standards are available from American Society for Testing and Materials, (ASTM), 100 Bar Harbor Drive, 2 Conshohocken, Pennsylvania 19428-2959, at a cost as of the time of adoption of these rules, as stated in this subdivision:

(i) ASTM D 2667-2008, standard test method for biodegradability of alkylbenzene sulfonates. Cost $69.00.

(ii) ASTM E 648-2010, “standard test method for critical radiant flux of floor-covering systems using a radiant heat energy source”. Cost $69.00.

(iii) ASTM F 714-2012, “standard specification for polyethylene (PE) plastic pipe (SDR-PR) based on outside diameter”. Cost $69.00.

(d) The standards adopted in this subrule are also available for inspection at the Michigan Department of Licensing and Regulatory Affairs, Bureau of Construction Codes, 611 W. Ottawa St., 1st Floor Ottawa Building, Lansing, Michigan 48933. Direction to the organizations’ website to order the book may be obtained from the bureau of construction codes. The cost of the individual codes is noted in this subrule.

(e) All references to NFPA 70 mean the current Michigan electrical code. The Michigan electrical code is available for inspection at the Michigan Department of Licensing and Regulatory Affairs, Bureau of Construction Codes 611 W. Ottawa St., 1st Floor Ottawa Building, Lansing, Michigan 48933, at a cost as of the time of adoption of these amendatory rules of $89.50.

History: 2003 AACS; 2005 AACS; 2010 AACS; 2014 AACS; 2023 AACS.

R 408.7004 Registration of elevators.

Rule 4. An elevator shall be registered by the owner or user stating the location, type, capacity, name of manufacturer, and purpose for which it is used. Regardless of changes in ownership, the current certificate holder is responsible for submitting this information and updating this information. The certificate holder shall submit this information to the department in writing.

History: 2003 AACS; 2023 AACS.

R 408.7005 Identification plates and tags.

Rule 5. (1) The holder of a certificate of operation shall permanently attach to the elevator in an approved area an identification plate or an engraving in the car operating panel, showing the type, the rated load, and the state-assigned serial number of each elevator. The assignment of a serial number does not automatically make the unit safe for public operation. All units shall be inspected before use pursuant to R 408.7010.

(2) One serial number tag must be furnished and permanently attached to the elevator machine controller.

(3) Identification plates and tags are furnished by the department and remain the property of the department.

History: 2003 AACS; 2023 AACS.

R 408.7006 Accident reports.

Rule 6. The holder of a certificate of operation shall notify the department within 48 hours of every accident involving personal injury or damage to the elevator in a manner and on a form prescribed by the department. The department may investigate any accidents involving personal injury or damage to the elevator.

History: 2003 AACS; 2023 AACS.

R 408.7007 Responsibility for elevator operation and maintenance.

Rule 7. (1) Responsibility for the operation and maintenance of elevators is as follows:

(a) The person, firm, or corporation installing, repairing, relocating, or altering an elevator is responsible for its operation and maintenance until the certificate of operation is issued, except as provided for in R 408.7012**,** and is responsible for all tests of new, repaired, relocated, and altered equipment until the certificate of operation is issued.

(b) The holder of a certificate of operation or duly appointed agent is responsible for the safe operation and proper maintenance of the elevator.

(c) The holder of the certificate of operation is responsible for all periodic inspections and tests, securing the renewal of the certificate of operation, and the compliance with violation notices.

(d) The licensed contractor holding a temporary certificate of operation is responsible for the safe operation, maintenance, repair, replacement, testing, and fees of the elevator during the period that the temporary certificate is in force.

(2) Safety tests must be performed by elevator journeypersons who are licensed in this state.

History: 2003 AACS; 2023 AACS.

R 408.7008 Commissions of special elevator inspectors.

Rule 8. (1) A commission to inspect elevators in accordance with section 11 of the act may be issued by the director to a designated holder of a special certificate of competency when the fee has been paid and a written request is received from a company authorized to insure elevators in this state. Such a commission shall not be transferable. The commission shall be retained by the company and a commission credential card shall be issued to the special inspector. The commission and commission credential card shall be returned when services of the inspector terminate.

(2) A commission shall expire annually on December 31. A commission may be renewed by payment of a renewal fee and return of the expired card and commission renewal form.

History: 2003 AACS.

R 408.7009 Examinations by elevator and equipment dealers and insurance companies.

Rule 9. Nothing in the act shall prevent the examination of elevators by dealers in elevators or elevator equipment or any approved insurance company.

Such examination shall not be considered an inspection within the provisions of the act.

History: 2003 AACS.

R 408.7010 New, altered, or relocated elevators; use.

Rule 10. A new, altered, or relocated elevator shall not be placed into service until it has been inspected by, and tested in the presence of, a general inspector, except as provided in section 15 of the act.

History: 2003 AACS.

R 408.7011 Frequency of inspections.

Rule 11. All elevators shall be inspected by a general elevator inspector pursuant to the following schedule:

(a) Passenger, freight, mine, inclined, limited-use/limited application, special purpose personnel, and rooftop elevators, material lifts, barrier free lifting devices, escalators, moving walks, belt manlifts, and special elevating devices shall be inspected at least once every 12 months.

(b) Dumbwaiters, stairway chairlifts, 1-person elevators, hand-powered; 1-person elevators, electric-powered; platform lifts; and power sidewalk elevators shall be inspected at least once every 24 months.

(c) Personnel hoists shall be inspected at least once every 30 days.

(d) Elevating devices in private residences shall be inspected only at the discretion of the department or owner.

(e) Private residence inclined elevators installed under the requirements of the act for use by multiple residences, shall be inspected at least once every 24 months.

(f) More frequent inspections may be scheduled at the discretion of the department or owner.

History: 2003 AACS; 2014 AACS.

R 408.7012 Temporary use of permanent elevators during construction.

Rule 12. (1) A licensed elevator contractor may request a temporary certificate of operation to permit the use of a passenger or freight elevator before its completion. The passenger or freight elevator must not be used until it has been approved by a general inspector, the required fee has been paid, and a temporary certificate of operation has been

obtained. This certificate must be issued for a period not to exceed 90 calendar days. Renewals under this subrule may be granted at the discretion of the department as follows:

(a) Permanent elevators used temporarily during construction to move workers, authorized personnel, and materials must have maintenance performed every 30 calendar days by a licensed elevator journeyperson. These elevators must be inspected by a general elevator inspector employed by the department every 90 calendar days.

(b) Periodic inspections may be conducted by a general inspector every 30 calendar days. The fees are cited in R 408.7019 and may be assessed at the discretion of the department based upon the frequencies in this rule.

(2) A licensed elevator contractor may also request an inspection and temporary certificate of operation to allow the use of a passenger or freight elevator by the public before its completion. This elevator must not be used until it is inspected by a general inspector; the required fee, listed in R 408.7019, is paid; and a temporary certificate of operation is issued by the department to the licensed elevator contractor. The certificate must be issued for a period not to exceed 90 calendar days. Renewals under this subrule may be granted at the discretion of the department as follows:

(a) Permanent elevators used temporarily by the public must have maintenance performed by a licensed elevator journeyperson every 30 calendar days.

(b) Periodic inspections may be conducted by a general inspector every 30 calendar days and the appropriate fees assessed at the discretion of the department.

History: 2003 AACS; 2023 AACS.

R 408.7013 Discontinuance of operation.

Rule 13. A general inspector may seal an elevator out of service and void the certificate of operation as provided in section 19 of the act or if any of the following conditions exist:

(a) The holder of the certificate of operation fails to pay the required fee.

(b) The holder of the certificate of operation fails to report an accident as required by these rules.

(c) The elevator has been constructed, installed, altered, maintained, or repaired by a person, firm, or corporation not approved by the department.

History: 2003 AACS.

R 408.7014 Inspection reports and certificates of operation.

Rule 14. (1) A general inspector shall provide a report to the department of each inspection stating the condition of the elevator within 2 business days of the inspection.

(2) A report indicating an elevator has been sealed out of service must be forwarded to the department within 48 hours of being sealed.

(3) The director shall issue a certificate of operation for a capacity not to exceed the capacity named in the inspection report.

History: 2003 AACS; 2023 AACS.

R 408.7015 Violation notices.

Rule 15. (1) If upon inspection an elevator is determined to be in an unsafe condition, or if the owner or user has not complied with these rules, then the general inspector shall issue to the holder of the certificate of operation a violation notice stating corrections required and a time limit within which the owner or user must comply with the violation notice. The owner or user shall notify the department in writing as soon as he or she has complied with the corrections stated in the violation notice and full compliance is affected. Notification must be on forms furnished by the department.

(2) If in the judgment of the general inspector failure to make these corrections would endanger human life, then compliance with the violation notice may be required immediately.

(3) Noncompliance with the violation notice may subject the holder of the certificate of operation to the penalty provisions of the act.

History: 2003 AACS; 2023 AACS.

R 408.7016 Special elevating devices.

Rule 16. (1) Special elevating devices within the scope of the act shall meet the requirements established by the department and the rules promulgated by the board.

(2) The devices specified in subrule (1) of this rule shall receive special consideration from the department as to the safety features incorporated into them before they may be approved for installation. A permit to install a special elevating device shall be obtained from the department in accordance with section 15 of the act.

(3) Stagelifts are special elevating devices and shall meet the requirements of this rule.

History: 2003 AACS.

R 408.7017 Examination for license or certificate of competency; journeyperson.

Rule 17. The board may delegate to the elevator division the authority to administer the written or oral examinations, or both, required for a journeyperson's license. The minimum passing grade for an applicant for a license or a certificate of competency shall be 70%. An applicant who fails to attain the minimum passing grade is not eligible for reexamination for 60 days after the examination, except as otherwise required by the act or by special permission of the board. A new application form and payment of the prescribed fee is required each time an applicant is examined.

History: 2003 AACS.

R 408.7018 Elevator contractors' and journeypersons' licenses; type; classification.

Rule 18. (1) Elevator contractors' licenses and elevator journeypersons' licenses are classified as follows:

(a) Type A, which covers the construction, repair, installation, alteration, and maintenance of any type of elevating device within the scope of the act.

(b) Type B, which covers the repair and maintenance of any type of elevating device within the scope of the act.

(c) Type C, which covers specific installations designed for particular and special purposes for which the applicant proves that he or she is qualified.

(2) More than 1 type of device may be combined or added to 1 Class C elevator contractor's license if the applicant has passed a written examination for each type of device.

History: 2003 AACS.

R 408.7019 Fees.

Rule 19. (1) All fees are subject to a 2% to 3% increase per annum at the discretion of the department. All fee amounts are in effect as of the effective date of these rules and are approved for 1 calendar year. After this first calendar year, the department must issue and enforce an updated fee schedule each calendar year. Fees must be paid in accordance with the following schedule:

Commissions to inspect elevators

Commission .....$50.00.
Commission renewal.....$50.00.

Examination for certificates of competency

Certificate of competency examination (nonrefundable) .....$50.00.

Elevator contractors and journeyperson examination and licenses

Elevator contractor’s license and renewal (nonrefundable).....$100.00.
Elevator contractor’s examination (nonrefundable) .....$100.00.
Elevator journeyperson license and renewal (nonrefundable).....$40.00.
Elevator journeyperson examination (nonrefundable).....$100.00.

Installation permits fees

Application fee all devices (nontransferable and nonrefundable) .....$100.00.
Base permit fee for the following devices: .....$300.00.

Passenger elevator
Freight elevator
Inclined elevator
Limited-use/limited application elevator
Private residence elevator
Private residence inclined elevator
Special purpose personnel elevator
Dumbwaiter
Material lift
Power sidewalk elevator
Rooftop elevator
Belt manlift
Special elevating device

Personnel hoist

For these installations, an additional amount of $50.00 is charged for each hoistway opening or for each floor traveled without a hoistway opening, or both.

Base permit fee: escalators and moving walks .....$360.00.

Base permit fee: private residence platform lift and private residency stairway chairlift……. $250.00.

Base permit fee: platform lift and stairway chairlift ……..…..$100.00.

Alteration, replacement, and dormant elevator permit fees

Application fee: all devices, excluding emergency permits, nontransferable and nonrefundable. …… $100.00.

Alteration personnel hoist ……. $150.00.

For the specified alteration fees, an additional amount is charged for each additional alteration and or personnel hoist tower rise at $75.00.

Dormant elevator …….. $100.00.

For alterations, excluding personnel hoist, and dormant elevators, an additional amount of $25.00 is charged for each hoistway opening or for each floor traveled without a hoistway opening, or both.

Emergency permit fee, maximum 2 items and not applicable for installations. $500.00.

Certificate of operation

Biennial and annual certificate of operation……..$60.00.

Temporary certificate of operation …….$250.00.

Inspection by general inspector

Biennial inspection for devices complying with R 408.7011(b)…….$125.00.

Annual and biennial inspection for all other devices……...$175.00.

The items listed under “Inspection by general inspector” also have an additional amount of $25.00 that will be charged for each hoistway opening or for each floor traveled without a hoistway opening, or both.

Temporary certificate of operation inspection……$200.00.

The temporary certificate of operation inspection has an additional amount of $35.00 that will be charged for each hoistway opening or for each floor traveled without a hoistway opening, or both.

Reinspection or violation notice follow-up for devices complying with R 408.7011(b)……..$125.00.

Reinspection or violation notice follow-up for all other devices…….$175.00.

(2) A final inspection fee is included in the installation and alteration permit fee. If a scheduled final inspection is canceled without 24 hours notice to the department, or if the elevator is not complete in the judgment of the general elevator inspector, then an additional fee must be charged to the elevator contractor as follows:

(a) $450.00 for private residence elevator, dumbwaiter, platform lift, or stairway chairlift.

(b) $750.00 for all other devices.

(3) A written request for a refund on a permit must be made within 1 year from the application date. An issued permit becomes invalid unless the work on the site authorized by the permit is commenced within 180 days after issuance, or if the work authorized on the site by the permit is suspended or abandoned for a period of 180 days after work is commenced. A 1-time 180-day permit extension must automatically be granted when a building permit for the same project remains valid.

(4) The department may provide, upon written request, special services that are not otherwise

covered in the fee structure. The charge for this service $150.00 per hour including travel time, any overnight accommodations, or special traveling needs, such as flights, if required. Fees that are required pursuant to the provisions of the act must be paid to the department. Checks or money orders must be made payable to the "State of Michigan."

History: 2003 AACS; 2005 AACS; 2008 AACS; 2014 AACS; 2023 AACS.

R 408.7020 Licensed elevator contractor and elevator contracting company.

Rule 20. (1) If an elevator contracting company's ability to apply for permits is based on the qualification of employing an individual who works full-time and is licensed in this state as an elevator contractor, the termination or separation of employment of the licensed elevator contractor must result in the immediate suspension of the elevator contracting company's ability to obtain new permits. An elevator contracting company's ability to request permits remains suspended until another licensed elevator contractor is working full time for the elevator contracting company. Upon separation from the elevator contracting company, the licensed elevator contractor and the elevator contracting company shall each immediately notify the department in writing when the termination or separation of the employment occurs. The notification to the department of a new licensed elevator contractor working for an elevator contracting company must be submitted in writing by the licensed elevator contractor and the elevator contracting company within 5 business days of hiring. Failure to notify the department of separation or hiring may result in a $50.00 fine to be paid by either or both parties found not to have notified the department.

(2) A person serving as the licensed elevator contractor of an elevator contracting company may not concurrently serve as a licensed elevator contractor for another elevator contracting company. A licensed elevator contractor must be employed on a full-time basis by the elevator contracting company for whom the elevator contractor requests permits.

(3) The elevator contracting company and the licensed elevator contractor are jointly and separately responsible for exercising the supervision and control of the elevator operations necessary to secure full compliance with the act, the rules promulgated under the act, and all other laws and rules related to elevating devices.

History: 2003 AACS; 2014 AACS; 2023 AACS.

R 408.7021 Renewal of contractor's licenses and commissions.

Rule 21. A contractor's license and a commission which has expired may be renewed within 60 days after the date of expiration without examination upon payment of the required renewal fee and late fee of $20.00. A contractor's license and a commission which is not so renewed is considered revoked. The revoked contractor's license or commission may be reinstated if approved by the elevator safety board, and upon payment of the required renewal fee and reinstatement fee of $100.00.

History: 2003 AACS; 2014 AACS.

R 408.7022 Violations; penalties.

Rule 22. Any person, firm, or corporation who shall refuse to comply with, or who shall assist in the violation of, any of the provisions of these rules, or who, in any manner hinders, obstructs, resists, prevents, causes unreasonable delay, or in any manner interferes with the inspectors in the performance of any duty herein imposed, or shall refuse to permit such inspectors to perform their duty by refusing them entrance at reasonable hours to buildings or places for the purpose of enforcement of these rules, shall be subject to the fines and penalties as provided by the act.

History: 2003 AACS.

R 408.7023 Appeals to the board.

Rule 23. (1) Any person, firm, or corporation aggrieved by any decision, ruling, or order of the director or of the department may appeal 1 time. The appeal must be made in writing within 15 calendar days from date of mailing of the decision, ruling, or order to the board, for a hearing before the board pursuant to section 8(1)(d) of the act, MCL 408.808. An appeal must specify the reasons and the relief sought and be submitted to the director for presentation to the board. All submissions must include but not limited to make, model, and drawings detailing top, side, front and orthographic views of equipment including detailed documentation specific to affected systems, parts, assemblies and devices as well as any connected equipment subject to the discretion of the department and board.

(2) A $250.00 nonrefundable fee must be made to the department at the time the appeal is filed. Checks, money orders, e-checks, cashier's checks, or credit card charges must be made payable to the "State of Michigan."

(3) The board shall set a time for hearing of the appeal and provide written notice to the appellant at least 10 days before the date set for hearing.

(4) A request for an adjournment must be filed in writing at least 5 days before the date set for hearing. The board or the director may, for good cause, grant an adjournment.

(5) If the appellant fails to appear at the time set for hearing, the board may proceed with the hearing and decide the case in the absence of the appellant. The board may affirm, modify, or set aside the ruling of the department and shall notify the director and the appellant in writing of its decision.

History: 2003 AACS; 2014 AACS; 2023 AACS.

R 408.7023a Variance requests.

Rule 23a. (1) A person, firm, or corporation upon application in specific cases, may request a variation of the requirements of the rules when it is clearly evident that exceptions or variations are necessary to prevent undue hardship or when existing conditions prevent compliance with the requirements of the act and these rules. The request must be on a form prescribed by the department. A person, firm, or corporation shall specify on the form the reasons for the variance and the relief sought. The form must be submitted to the department for review.

(2) A $100.00 nonrefundable fee must be paid to the department at the time the variance request is filed. Checks, money orders, e-checks, cashier's checks, or credit card charges must be made payable to the "State of Michigan".

(3) The department may submit the variance request to the board for its action. The department shall set a time for reviewing a request submitted to the board and provide written notice to the appellant at least 10 days before the date set for the review.

(4) A request for an adjournment must be filed in writing by the appellant at least 5 days before the date set for the review. The department or the board may, for good cause, grant an adjournment.

(5) If the appellant fails to appear at the time set for the variance request, the action may continue and the board may decide the request in the absence of the appellant. The request may be approved, denied, modified, or set aside. The department shall notify the appellant in writing of the decision.

History: 2014 AACS; 2023 AACS.

R 408.7023b Product acknowledgement.

Rule 23b. (1) All elevating devices, equipment, systems, subsystems, components, and functions must be reviewed for compliance with the current elevator requirements and approved by the department before use in this state. An initial $100.00 nonrefundable application fee must be made to the department at the time of application.

(2) All product acknowledgement requests must be on a form prescribed by the department and accompanied by a compliance document that reflects compliance with the corresponding requirements and supporting documents, including, but not limited to, make, model, and wiring diagram; factor of safety calculations; certifications; drawings detailing top, side, front, and orthographic views of equipment, including detailed documentation specific to affected systems, parts, assemblies and devices; and any other information the department finds necessary for the specific review.

(3) A letter on the manufacturer's letterhead, signed by an engineer who is employed by the manufacturer, must accompany the documentation. The letter must state that when installed per manufacturer specifications, the unit will comply with the applicable standards or codes, or both, that are adopted by reference in R 408.7003. Equipment not covered by codes and standards in accordance with R 408.7003 must not be installed until approved in accordance with this rule.

(4) A rate of $100.00 per hour may be charged for special services of a product review. The total charges are determined on an hourly basis for the review upon completion. An

acknowledgement may not be granted until full payment of these services has been received.

History: 2014 AACS; 2023 AACS.

R 408.7024 Applicability of rules and manual.

Rule 24. Elevators that were installed before the effective date of this code edition must comply with this state's elevator laws and rules in effect at the time of installation. The alteration of elevators installed before the effective date of this code must comply with the state's elevator laws and rules in effect at the time of alteration. All other approved existing features or components of the elevator must comply with these rules and be maintained as described in the ASME safety code for existing elevators and escalators ASME A-17.3, which is adopted by reference in R 408.7003.

History: 2003 AACS; 2005 AACS; 2010 AACS; 2014 AACS; 2023 AACS.

R 408.7025 Maintenance of power elevators; frequency; exceptions.

Rule 25. (1) A power elevator, except a private residence elevator, private residence inclined elevator, private residence platform lift, or private residence stairway chairlift, must be maintained at least once every 90 days by an elevator journeyperson who is licensed in this state, except for the following devices**,** which must be maintained at least once every 180 days:

(a) Dumbwaiters.

(b) One-person elevators, electric and hand-powered.

(c) Platform lifts and stairway chairlifts in buildings other than private residences.

(d) Private residences inclined elevators installed under the requirements of the act for use by multiple residences.

(2) An ongoing written record of all maintenance, repairs, replacements, inspection, callbacks, and testing must be kept in the machine room or on-site if a machine room does not exist.

History: 2003 AACS; 2014 AACS; 2023 AACS.

CHAPTER 2. ALL ELEVATORS

R 408.7026 Disconnecting means for new and altered elevators.

Rule 26. The disconnecting means for all elevators and escalators that have 208 volts alternating current (VAC) nominal, shall be a heavy-duty type means and feature a dual cover interlock or a circuit breaker capable of being locked in the open position.

History: 2003 AACS; 2014 AACS.

R 408.7027 Elevators operated from car only.

Rule 27. All existing or new elevators operated from the car only shall be provided with an approved means of opening the landing door, from the landing side, when the car is in the unlocking zone.

History: 2003 AACS.

R 408.7028 Buffers and bumpers.

Rule 28. Buffers of the spring, oil, or equivalent type shall be installed under cars and counterweights of all elevators. Bumpers or solid stops are prohibited.

History: 2003 AACS.

R 408.7029 Dormant elevators.

Rule 29. (1) An elevator, escalator, or moving walk that is inactive for 1 year must be classified as dormant and placed out of service in compliance with section 8.11.1.4(b) of the ASME A17.1 code.

(2) A permit must be obtained and the elevator must not be placed into service until it has been inspected and tested by a general inspector, except as provided in section 15 of the act, MCL 408.815.

(3) A platform lift or stairway chairlift that is inactive for 1 year must be classified as dormant and placed out of service as follows:

(a) The device must be lowered and any suspension means removed.

(b) The power feed lines must be disconnected from the machine disconnect switch ensuring all circuit parts or conductors are deenergized. The platform lift or stairway chairlift must comply with section 10.1.6 of the ASME A18.1 code, as adopted by reference in R 408.7003.

(c) All landing entrances must be secured in a closed position from inside the runway or hoistway.

(d) Folding type devices must be secured against movement.

(4) Before a dormant elevating device may be placed in service, an alteration permit must be applied for and approved by the department. The dormant elevating device must be inspected by the department and conform to these rules and the applicable section of the standard.

History: 2003 AACS; 2014 AACS; 2023 AACS.

R 408.7030 Elevator and escalator monitoring.

Rule 30. All elevators and escalators may be monitored from a remote location. Monitoring must consist of passing information from the elevator control to a remote location for the collection of information. A device may not have the capability to adjust, alter, change**,** or reset any switch, parameter, or system of the elevator control from any location except the corresponding car, hoistway, machine room, lobby panel, or fire command center. The device must not be capable of bypassing or resetting any safety or

electrical protective device. The monitoring means may be used to initiate car and hall landing calls or to secure floors from access. Information collected must be made available to the department upon request. A system related to the operation of an elevator or escalator that interfaces and communicates with the device and any other device must also comply with this rule. Remote connections found to be in violation of the above requirements must be removed and prohibited from future use.

History: 2003 AACS; 2014 AACS; 2023 AACS.

R 408.7031 Existing elevator and barrier free lifting device, door, and clearance requirements.

Rule 31. Existing elevator and barrier free lifting devices shall comply with sections 2.11.4 and 2.14.4 of the ASME A17.1 code.

History: 2003 AACS.

CHAPTER 3. ASME A17.1 MODIFICATIONS

R 408.7031a Automated equipment utilizing elevator.

Rule 31a. (1) Not more than 1 elevator in a bank may be occupied by an automated device at any 1 time. If a single elevator bank is selected due to normal power supply loss, automated devices may not utilize that car. General public passenger cars may not be used to transport automated devices.

(2) A maintenance program for devices must be instituted by the building owner and be available to the requestor upon request.

(3) Devices that utilize multiple carts must be tested annually with all possible variations of carts. Records must be kept onsite and be available to the requestor upon request.

(4) All circuitry and controllers must be kept out of elevator machine rooms and control spaces.

(5) Proper signage must be posted at each elevator connected to the automated devices. Signs must include both of the following language:

(a) Do not enter or use elevator if automated carts are entering, exiting, or on the car.

(b) Service elevator interfaced with automated carts, “Stand clear!”

(6) Any interfacing must comply with R 408.7030.

History: 2014 AACS; 2023 AACS.

R 408.7031b Guards between adjacent pits.

Rule 31b. Section 2.2.3 of the ASME A17.1 code is amended to read as follows:

2.2.3.1 Guards must be provided between adjacent pits. The guard must be of noncombustible material. The guard, if of openwork material, must reject a ball 25 mm (1 inch) in diameter. The guard must be supported such that when subjected to a force of 450 N (100 lbf) applied over an area of 100 mm by 100 mm (4 inches by 4 inches) at any

location, the deflection must not reduce the clearance between the guard and the adjacent pit below 25 mm (1 inch). Guards must extend not less than 2000 mm (79 inches) above the level of the higher pit floor. Where a ladder is installed adjacent to a guard, the guard must extend not less than 2000 mm (79 inches) above the top rung or rungs used as handgrips. A single horizontal structural element at the top of a pit ladder, used to stabilize the vertical side rails, is not considered a rung or handgrip.

2.2.3.2 Where access to pits of elevators in a multiple hoistway is by means of a separate pit access door (see 2.2.4.5) and not by a pit access ladder, adjacent pits must:

(a) Be guarded as required by 2.2.3.1.

(b)The guards may be omitted if the clearance between the bottom of the car or counterweight, including any equipment attached thereto, while resting on a fully compressed buffer and the bottom of the pit is not less than 2,130 mm (84 inches)

History: 2023 AACS.

R 408.7032 Machinery space, machine rooms, control spaces, and control rooms.

Rule 32. Section 2.7 of the ASME A17.1 code is amended to read as follows:

2.7. A machinery space outside the hoistway containing an electric driving machine and an elevator controller shall be a machine room. The electric driving machine shall be located in a machinery space within the elevator hoistway or outside the hoistway in an elevator machine room. A controller shall be accessible only from a machinery space, machine room, control room, or hoistway.

History: 2003 AACS; 2005 AACS; 2010 AACS; 2014 AACS.

R 408.7033 Drains and sump pumps.

Rule 33. Section 2.2.2.4 of the ASME A17.1 code is amended to read as follows:

2.2.2.4 Drains and sump pumps, where provided, shall comply with the Michigan plumbing code, R 408.40701 et seq. and shall be provided with a positive means to prevent water, gases, and odors from entering the hoistway.

Subsoil drains shall not be connected or discharged to elevator pits or sumps.

History: 2003 AACS.

R 408.7033a Sumps and sump pumps.

Rule 33a. Section 2.2.2.6 of ASME A17.1 is amended to read as follows: Sumps and sump pumps in pits, where provided, must be covered. Covers must be secured and level with the pit floor and be either a recessed grate type or solid. If solid, it must have means to permit water flow to comply with section 2.2.2.5 of ASME 17.1.

History: 2023 AACS.

R 408.7034 Enclosure of machine rooms and machinery spaces.

Rule 34. Section 2.7.1 of the ASME A17.1 code is amended to read as follows:

2.7.1. Machines, control equipment, sheaves, and other machinery may not be exposed to the weather. Machine room, control room, and machinery-space enclosures must conform to section 2.7.1.1 or 2.7.1.2, and also conform to 2.7.1.3 of the ASME A17.1 code, as applicable.

Machine rooms and control rooms must be located at a hoistway landing associated with the equipment within the room. Elevator machine and control rooms may be located overhead, adjacent to, underneath the hoistway, or at a remote location. The entrance to the machine room or control room may be not more than 25 feet, clear unobstructed walking pathway from the elevator hoistway door. The distance from the machine room door to the hoistway door may be over 25 feet when the machine room is located directly above the hoistway in a conventional layout. Pit and hoistway access doors may not be a direct access between a hoistway enclosure and machine room or control room.

Elevators installed without a machine room or control room must locate the required disconnecting means outside of the hoistway in a separate dedicated control space that is readily accessible and adjacent to the control space that contains the control.

The disconnecting means must be in a single dedicated space or dedicated room**,** intended with or without full body entry, at a distance not to exceed 25 feet from the landing that contains the elevator control, inspection, or test panel. The disconnecting means must be secured so that only elevator journeyman and qualified personnel may gain access. If the controller is within an entrance assembly, signage must be placed at or near the frame with the specific location of the disconnecting means.

Access to machine rooms, control rooms, machine spaces, or control spaces may not be through restrooms, lavatories, locker rooms, or associated vestibules. Where enclosed ceilings are required or provided**,** they must be of a solid type with no access panels. Drop type ceilings are not permitted. Machine rooms, control rooms, machinery spaces, and control spaces may not be used as a pass through or for access to other areas. Building access panels or doors are prohibited in these areas.

History: 2003 AACS; 2010 AACS; 2014 AACS; 2023 AACS.

R 408.7034a Location of equipment.

Rule 34a. Section 2.7.6.3.2 of the ASME A 17.1 code is amended to read as follows:

2.7.6.3.2 The motor controller must be located in a machinery space within the hoistway, a machine room, or control room. A motor controller may not be located outside the specified rooms or spaces. Regardless of location, illumination of 19 fc, meaning foot candles, must be provided where controller work is to be performed.

History: 2010 AACS; 2023 AACS.

R 408.7035 Rescinded.

History: 2003 AACS; 2010 AACS; 2014 AACS.

R 408.7036 Rescinded.

History: 2003 AACS; 2010 AACS; 2014 AACS.

R 408.7037 Rescinded.

History: 2003 AACS; 2014 AACS.

R 408.7037a Illumination of cars and lighting fixtures.

Rule 37a. Section 2.14.7.1.4 of ASME A17.1 is amended to read as follows:

2.14.7.1.4 Each elevator must be provided with at least 2 electric light fixtures and a ground fault circuit interrupter duplex receptable on the car top. The 2 light fixtures combined must provide an illumination level of not less than 10 fc at any point on the car top. The light fixtures must be permanent and be of the fixed or portable type and be equipped with guards.

History: 2005 AACS; 2023 AACS.

R 408.7038 Overloading of freight elevators.

Rule 38. Section 2.16.6 of the ASME A17.1 code is amended to read as follows:

2.16.6 Freight elevators shall not be loaded in excess of their rated load as specified on the capacity plate required by section 2.16.3 of the ASME A17.1 code.

Exceptions:

(a) Static loads on elevators loaded and unloaded by industrial trucks as noted on capacity or separate plate shall comply with sections 2.16.2.2.3 and 2.16.3.2.1(b) of the ASME A17.1 code.

(b) Elevators designed and installed in compliance with section 2.16.7 of the ASME A17.1 code to carry 1-piece loads exceeding their rated load.

If the department determines that safe operation requires it, a load-weighing device shall be installed. The load weighing device shall prevent operation of the elevator in the down direction only when the load on the platform is in excess of 125% of the rated load as determined by the requirements of section 2.16.3 of the ASME A17.1 code. Such devices shall prevent operation of the elevator in the up direction when the load on the car is in excess of the rated load.

History: 2003 AACS.

R 408.7039 Rescinded.

History: 2003 AACS; 2005 AACS.

R 408.7040 Rescinded.

History: 2003 AACS; 2010 AACS; 2014 AACS. .

R 408.7040a Phase I emergency recall operation.

Rule 40a. Section 2.27.3.1.5 of the ASME A17.1 code is amended to read as follows:

All “FIRE RECALL” switches must be provided with an illuminated visual signal. The visual signal must be 1 of the symbols shown in Fig.2.27.3.1.6(h) to indicate when Phase I Emergency Recall Operation is in effect.

History: 2023 AACS.

R 408.7041 Machinery spaces, machine rooms, control spaces, and control rooms.

Rule 41. Sections 3.7 and 3.7.1 of the ASME A17.1 code is amended to read as follows:

3.7. A machinery space outside the hoistway containing a hydraulic machine and an elevator controller must be a machine room. The hydraulic machine must be located in the hoistway or outside the hoistway in an elevator machine room. Hydraulic machines being installed in the line of movement of an elevator car or where an affected person is required to work in the line of movement of an elevator car must be prohibited. The elevator controller must be accessible only from a machine room, control room, or hoistway.

3.7.1. Hydraulic machines, control equipment, sheaves, and other machinery may not be exposed to the weather. Machine room, control room, and machinery-space enclosures must conform to the requirements of sections 2.7.1 to 2.7.7 and 2.7.9 of the ASME A17.1 code and the following:

Machine rooms and control rooms must be located at a hoistway landing associated with the equipment within the room. Elevator machine and control rooms may be located overhead, adjacent to, underneath the hoistway, or at a remote location. The entrance to the machine room or control room must be not more than 25 feet, clear unobstructed walking pathway from the elevator hoistway door. The distance from the machine room door to the hoistway door may be over 25 feet when the machine room is located directly above the hoistway in a conventional layout. Pit and hoistway access doors may not be for direct access between a hoistway enclosure and machine room or control room. Regardless of location, illumination of 19 fc, meaning foot candles, must be provided where controller and machinery work is to be performed.

Elevators installed without a machine room or control room must locate the required disconnecting means outside of the hoistway in a separate dedicated control space, readily accessible and adjacent to the control space that contains the control.

The disconnecting means must be in a single dedicated space or dedicated room**,** intended with or without full body entry, at a distance not to exceed 25 feet from the landing that contains the elevator control, inspection, or test panel. The disconnecting means must be secured so that only elevator journeyman and qualified personnel may gain access. If the controller is within an entrance assembly, signage must be placed in plain view, at or near the controller, and state the location of the disconnecting means.

Access to machine rooms, control rooms, machine spaces, or control spaces may not be through restrooms, lavatories, locker rooms, or associated vestibules. Where enclosed ceilings are required or provided**,** they must be of a solid type with no access panels. Drop

type ceilings are not permitted. Machine rooms, control rooms, machinery spaces, and control spaces may not be used as a pass through or for access to other areas. Building access panels or doors are prohibited in these areas.

History: 2003 AACS; 2010 AACS; 2014 AACS; 2023 AACS.

R 408.7041a. Fire extinguishers.

Rule 41a. Section 8.6.1.6.5 of ASME A17.1 is amended to read as follows: In jurisdictions not enforcing the National Building Code of Canada, Class "ABC" fire extinguishers must be provided in elevator machine rooms, control rooms, and control spaces outside the hoistway intended for full bodily entry, and walk-in machinery spaces and control rooms for escalators and moving walks; and they must be located convenient to the access door.
For machine-room-less (MRL) installations, Class "ABC" fire extinguishers must be conspicuously located where they are readily accessible outside of the elevator hoistway within 21 feet (6.4m) of the centerline of each elevator entrance associated with the controller. In the event of side or rear elevator entrance assemblies a Class "ABC" fire extinguisher must be conspicuously located in accordance with this rule.

History: 2023 AACS.

R 408.7042 Car safeties.

Rule 42. Section 3.17.1 of the ASME A17.1 code is amended to read as follows:

3.17.1 Car safeties shall be provided for roped-hydraulic elevators and shall be permitted to be provided for direct-acting hydraulic elevators.
When provided, car safeties shall comply with section 2.17 and sections 3.17.1.1 to 3.17.1.3 of the ASME A17.1 code.

Car safeties shall be installed if the department determines they are necessary for safe operation.

History: 2003 AACS.

R 408.7043 Cylinder protection.

Rule 43. Section 3.18.3.8.1 of the ASME A17.1 code is amended to read as follows:

3.18.3.8.1 Cylinders not completely exposed above ground shall be monitored by an approved means and protected from corrosion due to galvanic or electrolytic action, salt water, or other underground conditions. An outer protective cylinder casing of high density poly ethylene (HDPE) or poly vinyl chloride (PVC) is required on a new hydraulic elevator or where a cylinder is being replaced. PVC protective casings shall be a minimum of schedule 40 and comply with ASTM D 2667, HDPE casings shall be a minimum of DR 32.5 and comply with ASTM F 714. The bottom of the protective casing shall be sealed with a cap of the same material and schedule, and shall be properly installed, and water removed. The casing and monitoring system shall be installed by a licensed elevator journeyperson. The company installing the cylinder and monitoring system shall provide to the owner the specific monitoring procedures and log. A copy of the monitoring

procedure and log shall be maintained in the elevator machine room. At any time it is determined the HDPE or PVC protective casing is damaged or leaking, it shall be removed and replaced.

History: 2003 AACS; 2010 AACS.

R 408.7043a Cylinders buried in the ground

Rule 43a. Section 3.18.3.8.2 of the ASME A17.1 code is amended to read as follows:

3.18.3.8.2 The methods specified in 3.18.3.8.1 shall be considered acceptable, provided that they meet all the following:

(a) Are designed and installed with means for monitoring and maintaining them in accordance with recognized industry standards applicable to the methods.

(b) Are effective for specific conditions where the cylinder is installed.

(c) Provide means for checking ongoing compliance with 3.18.3.8.1.

History: 2010 AACS.

R 408.7044 Rescinded.

History: 2003 AACS; 2014 AACS.

R 408.7045 Shutoff valves; gauge snaps; underground piping; tags.

Rule 45. Section 3.19.4.1 of the ASME A17.1 code is amended to read as follows:

3.19.4.1 A shutoff valve must be provided on a new or altered hydraulic elevator and be installed in the pressure piping within the elevator machine room. If the hoistway is remotely located from the machine room, then a shutoff valve must also be provided in the elevator pit.

History: 2003 AACS; 2010 AACS; 2023 AACS.

R 408.7046 Pressure gauge fittings.

Rule 46. Section 3.19.4.5 of the ASME A17.1 code is amended to read as follows:

3.19.4.5 A new hydraulic machine must be provided with the necessary permanent pressure gauge snap-on fittings or permanent gauges, with a shut off valve to allow pressure readings at each pump for checking operating pressures. The gauge or fitting must be located on the jack side of the check valve or immediately adjacent to the hydraulic control valve.

History: 2003 AACS; 2010 AACS; 2023 AACS.

R 408.7047 Underground piping.

Rule 47. Section 3.19.5.1 of the ASME A17.1 code is amended to read as follows:

3.19.5.1 Underground piping in connection with a new hydraulic elevator is prohibited. If a cylinder is replaced on an existing hydraulic elevator, then the corresponding piping, if underground, is prohibited unless approved by the department.

History: 2003 AACS.

R 408.7047a Car safeties.

Rule 47a. Section 4.3.15 of the ASME A17.1 code is amended to read as follows:

4.3.15 Elevators shall be provided with a car safety, attached to the underside of the car frame, capable of stopping and sustaining the car with rated load.

The car safety device is not required to be operated by a speed governor, and may be of the instantaneous type operated as a result of the breaking or slackening of the suspension members.

Where the rise exceeds 12.5m (40 ft), driving machines having hand-operated brakes shall also be equipped with an automatic speed retarder.

History: 2010 AACS.

R 408.7047b Capacity.

Rule 47b. Section 5.3.1.10.1 of the ASME A17.1 is amended to read as follows:

5.3.1.10.1. The maximum inside net platform area shall not exceed 1.7m^2 (18 ft^2). The minimum rated load shall be not less than the following:

(a) For net platform areas up to and including 1.1 m^2 (12 ft^2), the rated load shall be not less than 195 kg/m^2 (40 lb/ft^2) or 159 kg (350 lb), whichever is greater.

(b) For net platform areas greater than 1.1 m^2 (12 ft^2), the rated load shall be based upon 305 kg/m^2 (62.5 lb/ft^2).

History: 2014 AACS.

R 408.7048 Buffers and buffer supports.

Rule 48. Section 5.3.1.14.1 of the ASME A17.1 code is amended to read as follows:

5.3.1.14.1 The car and counterweight shall be provided with spring or equivalent type buffers. They shall be designed and installed so that they will not be fully compressed when struck by car with its rated load or by the counterweight traveling at 125% of the rated speed, or at governor tripping speed where a governor-operated safety is used.

History: 2003 AACS; 2010 AACS.

R 408.7048a. Rupture or overspeed valve.

Rule 48a. Section 5.3.2.2.2 of the ASME A17.1 code is amended to read as follows:

A pressure switch must be provided to remove power from the pump motor and the control valve unless there is positive pressure at the control valve.

A rupture or overspeed valve must be provided on all roped hydraulic jacks, either cable or chain, to stop the flow of fluid and arrest the descent of the car in the event of line or pipe rupture.

History: 2023 AACS.

R 408.7049 Buffers.

Rule 49. Section 5.4.10.1 of the ASME A17.1 code is amended to read as follows:

5.4.10.1 For rated speeds not exceeding 0.25 m/s (50 ft/min), spring or equivalent type buffers are required. Bumpers or solid stops shall not be permitted.

History: 2003 AACS.

R 408.7050 Rescinded.

History: 2003 AACS; 2014 AACS.

R 408.7051 Type of operation.

Rule 51. Section 5.4.15.1 of the ASME A17.1 code is amended to read as follows:

5.4.15.1. The inclined elevator shall be operated by weatherproof constant pressure key switches or constant pressure switch or button at each landing and on the car. Key-operated switches shall be of the spring-return type and shall be operated by a cylinder type lock having not less than 5-pin or 5-disk combination with the key removable only when the switch is in the off position. Constant pressure switches and buttons shall be hand operated and controlled by an adjacent on-off key switch with the key removable only when the key is in the off position. The key shall be group 4 security in compliance with section 8.1 of the ASME A17.1 code.

History: 2003 AACS; 2014 AACS.

R 408.7052 Electrical equipment and wiring requirements.

Rule 52. Section 5.4.15.5.1 of the ASME A17.1 code is amended to read as follows:

5.4.15.5.1. All electrical equipment and wiring shall conform to the requirements of the Michigan electrical code and ASME A17.1 sections 5.3.1.18.4, 5.3.1.18.5 and 5.3.1.18.6. A fused disconnect switch or a circuit breaker shall be installed within the machine enclosure and connected to the power supply line to each electric motor. A hoisting motor shall have a manually reset type of electrical overload device.

History: 2003 AACS; 2014 AACS.

R 408.7053 Rescinded.

History: 2003 AACS; 2010 AACS.

R 408.7054 Skirt deflector devices.

Rule 54. Section 6.1.3.3.10 of the ASME A17.1 code is amended to read as follows:

6.1.3.3.10 Deflector devices are permitted. Where provided, deflector devices must extend from skirt panels parallel to the escalator path of travel. Means to secure these deflector devices may be on the exposed surface of the skirt. All fasteners must be of steel with machine screw threads. Any exposed fastener heads shall be of the tamper-resistant type and flush to within 1 mm, or 0.04 inch.

(1) Rigid elements must comply with the following conditions:

(a) Horizontal protrusions extending above the step must be 18 mm, or 0.75 inch maximum. Corners or changes in profile must be rounded or beveled.

The exposed surfaces of such elements must be smooth and permanently treated with a low-friction material.

(b) On the incline, the area of any protrusion must lie entirely offset outward from a line beginning on the vertical portion of the skirt panel measured 25 mm, or 1 inch-vertically above the step nose line. The lower surface must be beveled not less than 10 degrees upward and the upper surface must be beveled not less than 15 degrees downward in compliance with Figure 6.1.3.3.10 of the ASME A17.1 code.

(c) At the upper and lower landing, any protrusion must lie entirely above a line beginning on the vertical portion of the skirt panel 50 mm, or 2 inches, above the step nose line. The lower surface must be beveled not less than 10 degrees upward and the upper surface must be beveled not less than 15 degrees downward. Any rigid elements at the landings must smoothly blend into the rigid elements along the incline in accordance with the radius of curvature of the transition zone.

(d) If attached to the skirt, rigid elements must withstand a force of 900 N (200 lbf) perpendicular to the line of attachment of the element without detachment or permanent deformation. The force shall be applied to an area of 645 mm^2 (1 $inch^2$).

(2) Flexible elements must comply with the following conditions:

(a) The horizontal protrusion extending from the skirt surface above the step must be 50 mm, or 2 inches, maximum.

(b) Must be capable of deflecting to an angle of 10 degrees or greater above the horizontal protrusion.

(c) Noncontinuous flexible elements are allowed to deflect to allow a maximum of 9.5 mm, or 0.375 inch interference with any point on the step surface.

(d) Continuous flexible elements may not deflect such that they can contact the steps.

History: 2003 AACS; 2005 AACS; 2023 AACS.

R 408.7054a Rescinded.

History: 2005 AACS; 2010 AACS; 2023 AACS.

R 408.7054b Listed and certified devices.

Rule 54b. Section 8.6.3.7.2 is amended to the ASME A17.1 code to read as follows:

8.6.3.7.2 Where a listed or certified device or component is replaced, the replacement shall be manufactured to the specifications at the time the device or component was originally certified, engineering tested or type tested in accordance with section 8.3 of the ASME A17-1 code. Upon request, the contractor shall provide the department supporting documentation of compliance with the original specifications. Documents shall be signed and sealed by a licensed professional engineer acting within his or her discipline.

History: 2010 AACS.

R 408.7055 Record of oil usage.

Rule 55. Section 8.6.5.7 of the ASME A17.1 code is amended to read as follows:

8.6.5.7. For systems where part of the cylinder or piping, or both, are not exposed for visible inspection, a written record shall be kept of the quantity of hydraulic fluid added to the system and emptied from leakage collection containers and pans. The written record shall be kept in the machine room. If the quantity of hydraulic fluid loss cannot be accounted for, then the test specified in section 8.6.5.15.3 of R 408.7060 shall be done.

History: 2003 AACS; 2014 AACS.

R 408.7055a Periodic test.

Rule 55a. Section 8.6.7.4.1 of the ASME A17.1 code is amended to read as follows:

8.6.7.4.1. (1) Private residence inclined elevators and lifts should be subject to the periodic tests specified in 8.6.4.19, 8.6.4.20, and 8.6.4.14 to 8.6.5.16. The test requirements shall apply to the corresponding requirements in 5.4. Any additional requirements for this equipment should also be checked during these tests.

(2) Private residence inclined elevators installed under the requirements of the act for use by multiple, shall be subject to the periodic tests specified in 8.6.4.19, 8.6.4.20, and 8.6.5.14 to 8.6.5.16. The test requirements shall apply to the corresponding requirements in 5.4. Any additional requirements for this equipment shall also be checked during these tests.

History: 2014 AACS.

R 408.7056 Firefighters' emergency operation.

Rule 56. Section 8.6.11.1 of the ASME A17.1 code is amended to read as follows:

8.6.11.1. All elevators provided with firefighters' emergency operation shall be subjected quarterly to phase I recall by use of the key switch, and a minimum of 1-floor operation on phase II. Deficiencies shall be corrected. An accessible written record of test results shall be maintained in the machine room.

History: 2003 AACS; 2010 AACS; 2014 AACS.

R 408.7057 Applicability of alteration requirements.

Rule 57. Section 8.7.1.1 of the ASME A17.1 code is amended to read as follows:

8.7.1.1 (1) If an alteration is performed to the elevator or any of its subsystems, regardless of any other requirements of section 8.7 of the ASME A17.1 code, then the alteration, at a minimum, must conform to both of the following requirements:

(a) This state's elevator laws and rules at the time of installation.

(b) This state's elevator laws and rules for the alteration at the time of any alteration.

(2) A permit must be obtained and the elevator may not be placed into service until it has been inspected and tested in the presence of a general inspector, except as provided in section 15 of the act, MCL 408.815.

History: 2003 AACS; 2023 AACS.

R 408.7057a Bottom car clearances.

Rule 57a. Section 2.15.9.2(c) of ASME A17.1 is amended to read as follows:

2.15.9.2(c). Where the installation is the result of replacement or alteration utilizing an existing hoistway and pit, the toe guard may be reduced in length utilizing an existing hoistway and pit, provided the car speed does not exceed 150 feet per minute. The toe guard may be reduced in length proportionate to the maximum length the pit depth will allow complying with section 2.4.1.5. At no time may the toe guard be shorter than the leveling or truck zone plus 75mm, or 3 inches.

History: 2010 AACS; 2023 AACS.

R 408.7058 Cylinders.

Rule 58. Section 8.7.3.23.3 of the ASME A17.1 code is amended to read as follows:

8.7.3.23.3. Where a cylinder is installed, replaced, or altered, it shall conform to section 3.18.3 of the ASME A17.1 code. Sleeving of a cylinder shall not be permitted. If the plunger is not equipped with a stop ring conforming to section 3.18.4.1 of the ASME A17.1 code, the installation shall also conform to sections 3.18.1.2 and 3.18.2 of the ASME A17.1 code.

History: 2003 AACS; 2005 AACS; 2010 AACS; 2014 AACS.

R 408.7058a Escalator electrical protective devices.

Rule 58a. Section 6.1.6.3 of the ASME A17.1 code is amended to read as follows:

6.1.6.3. Electrical protective devices must be provided pursuant to 6.1.6.3 through 6.1.6.3.16 and be the manually resetting type. Automatic resetting of a safety device within these codes is prohibited.

History: 2010 AACS; 2023 AACS.

R 408.7058b Moving walk electrical protective devices.

Rule 58b. Section 6.2.6.3 of the ASME A17.1 code is amended to read as follows:

6.2.6.3. Electrical protective devices must be provided pursuant to 6.2.6.3.1 through 6.2.6.3.12 and be the manually resetting type. Automatic resetting of a safety device within these codes is prohibited.

History: 2010 AACS; 2023 AACS.

R 408.7058c Escalator handrail speed-monitoring device.

Rule 58c. Requirement 6.1.6.4 of the ASME A17.1 code is amended to read as follows: A handrail speed monitoring device must be provided that will cause the activation of the alarm required by 6.1.6.3.1(b) without any intentional delay, whenever the speed of either handrail deviates from the step speed by 15% or more. The device must also cause electric power to be removed from the driving-machine motor and brake when the speed deviation of 15% or more is continuous within a 2 s to 6 s range. The device must be of the manual reset type. Automatic resetting of a safety device within these codes is prohibited.

History: 2023 AACS.

R 408.7058d Moving walk handrail speed-monitoring device.

Rule 58d. Requirement 6.2.6.4 of the ASME A17.1 code is amended to read as follows: A Handrail Speed Monitoring Device must be provided that will cause the activation of the alarm required by 6.2.6.3.1(b) without any intentional delay whenever the speed of either handrail deviates from the treadway speed by 15% or more. The device must also cause electric power to be removed from the driving-machine motor and brake when the speed deviation of 15% or more is continuous within a 2 s to 6 s range. The device must be of the manual reset type. Automatic resetting of a safety device within these codes is prohibited.

History: 2023 AACS.

R 408.7059 Acceptance inspection and tests.

Rule 59. Section 8.10.1.1.1 of the ASME A17.1 code is amended to read as follows:

8.10.1.1.1. The acceptance inspection shall be made by an inspector employed by the authority having jurisdiction. All parts of the installation shall be inspected for conformity with the requirements of the Michigan elevator laws and rules and section 8.10 of the ASME A17.1 code. The American society of mechanical engineers A17.2-2012, guide-for inspection of elevators, escalators, and moving walks, ASME, a copy of which is adopted by reference in R 408.7024, is recommended as a guide in making the inspection. Balance load and maximum normal speeds with maximum rated load and no load shall be determined and recorded on forms furnished by the department.

History: 2003 AACS; 2010 AACS; 2014 AACS.

R 408.7059a Periodic test tags.

Rule 59a. Section 8.10.1.1.1 of the ASME A17.1 code is amended to read as follows: 8.10.1.1.1. The acceptance inspection must be made by an inspector employed by the authority having jurisdiction. All parts of the installation must be inspected for conformity with the requirements of this state's elevator laws, these rules, and section 8.10 of the ASME A17.1 and ASME 17.2. An approved paper tag must be installed in the machine room or machine space for all periodic tests.

History: 2010 AACS; 2014 AACS; 2023 AACS.

R 408.7060 Three-year inspection and test requirements.

Rule 60. Section 8.6.5.15.3 is added to the ASME A17.1 code to read as follows:

8.6.5.15.3. (1) Cylinders must be tested at intervals of not more than 36 months.

(2) Three-year inspection and test requirements are as follow:

(a) The relief valve setting must comply with section 3.19.4.2 of the ASME A17.1 code. The relief valve must be resealed if the relief valve setting is altered or if the seal is broken.

(b) Test the relief valve setting by first inching the empty car upward to engage the plunger stop ring or to engage other suitable blocking provided and then apply pressure from the pump to check the setting. A copy of test forms must be maintained on site in the machine room or space available to elevator personnel pursuant to section 8.6.1.4.1 of ASME A17.1. Procedures for set test are as follows:

(i) Put rated load in the car and locate it at any convenient level.

(ii) Open the disconnect switch and locate the elevation of the platform with respect to a convenient reference.

(iii) For cylinders that are not completely exposed, after not less than 2 hours, note the position of the platform with respect to the chosen reference. For cylinders that are completely exposed, after not less than 30 minutes, note the position of the platform with respect to the chosen reference. A change in the car position during a cylinder test that cannot be accounted for by visible oil leakage or temperature change of the oil indicates a failure of some type requiring further inspections, tests, or repairs. An accessible written record of all oil levels and all oil added must be maintained in the machine room.

History: 2003 AACS; 2005 AACS; 2014 AACS; 2023 AACS.

R 408.7060a Private residence elevators and private residence inclined elevators.

Rule 60a. Section 8.11.5.2 of the ASME A17.1 code is amended to read as follows:

8.11.5.2. (1) Private residence elevators should be subject to the periodic inspections specified in 8.11.2 and 8.11.3. The inspection requirements shall apply to the corresponding requirements in 5.3 and 5.4. Any additional requirements for this equipment should also be checked during these inspections.

(2) Private residence inclined elevators installed under the requirements of the act for use by multiple residences, shall be subject to the periodic inspections specified in 8.11.2 and 8.11.3. The inspection requirements shall apply to the corresponding requirements in 5.3 and 5.4. Any additional requirements for this equipment shall also be checked during these inspections.

History: 2014 AACS.

CHAPTER 4. ASME A18.1 MODIFICATIONS

R 408.7061 Runway enclosure.

Rule 61. Section 2.1.1.1 of the ASME A18.1 code is amended to read as follows:

2.1.1.1 The runway shall be guarded by a solid enclosure extending from the lowest landing to a height at least equal to the height of the platform enclosure above the uppermost landing, in no case less than 42 inches (1067 mm) above the uppermost landing. The enclosure shall withstand, without permanent deformation, a force of 125 lbf (556 n) applied on any 4 inch (102 mm) by 4 inch (102 mm) area. The interior of the runway enclosure shall present a smooth surface.

History: 2003 AACS.

R 408.7062 Runway entrance.

Rule 62. Section 2.1.1.2 of the ASME A18.1 code is amended to read as follows:

2.1.1.2 The runway entrance must be guarded at the upper landing by a door of unperforated construction not wider than the platform plus 1 inch, or 25.4 millimeters. The door must be self-closing or power operated and guard the entire opening to a height equal to or higher than the height of the platform enclosure. The openings created in the runway by these doors must provide a minimum vertical clearance of 6 feet 8 inches. The doors must guard the entire area of the openings except for space necessary for operation. Space necessary for operation must reject a ball 12 mm, or 0.5 inches**,** in diameter. The lift side of the landing doors and sill must present a smooth surface located not closer than 10 mm, or 0.375 inches, or more than 20 mm, or 0.75 inches, from the platform floor.

History: 2003 AACS; 2010 AACS; 2023 AACS.

R 408.7062a Portable and temporary vertical platform lifts.

Rule 62a. Section 2.1.3 of the ASME A18.1 code is amended to read as follows:

2.1.3 Portable and temporary vertical platform lifts may only be installed for temporary use and shall meet all of the following conditions:

(a) The portable or temporary platform lift may only be in place and in use for a maximum of 14 days. The 14 days begin on the date of the approval, which is given at the time of the installation inspection by the elevator safety division. The lift shall be removed from the site on or before the 16th day. In special situations a 1 time renewal may be granted by the department.

(b) The lift shall be attendant-operated in accordance with the requirements of 2.10.2.

(c) A key operated switch shall be provided at the operator station which will allow the up and down control switches to become effective only when the key is in the on position. The key operated switch shall be operated by a lock having 5-pin or 5-disk combination

with a key removable only in the off position. Anytime the lift is not being operated, the key switch shall be in the off position and the key shall be removed.

(d) The platform lift shall be positioned to prevent lateral movement during use.

(e) Site specific drawings, which clearly show the location of the lift with regards to the area to be accessed, shall be submitted with the permit application.

History: 2010 AACS.

R 408.7063 Rescinded.

History: 2003 AACS; 2014 AACS.

R 408.7064 Rescinded.

History: 2003 AACS; 2010 AACS; 2014 AACS.

R 408.7065 Rescinded.

History: 2003 AACS; 2010 AACS; 2014 AACS.

R 408.7066 Guarding.

Rule 66. Section 5.1.1.2 of the ASME A18.1 code is amended to read as follows:

5.1.1.2 A smooth vertical fascia of unperforated construction shall be provided from the top terminal landing sill and any intermediate landing sill to the level of the bottom terminal landing sill. Openings necessary for operation shall reject a ball 12 mm (0.5 in.) diameter. The fascia shall be equal to or stronger than 1.5 mm (0.0598 in.) sheet steel and guard the full width of the platform. The surface shall not be permanently deformed when a force of 550 N (125 lbf) is applied on any 100 mm (4 in.) by 100 mm (4 in.) area.

History: 2003 AACS; 2010 AACS.

R 408.7066a Rescinded.

History: 2010 AACS; 2014 AACS.

R 408.7067 Rescinded.

History: 2003 AACS; 2010 AACS; 2014 AACS.

R 408.7068 Inspection and test requirements for altered installations.

Rule 68. Section 10.5 of the ASME A18.1 code is amended to read as follows:

10.5 (1) If any alteration is performed, regardless of any other requirements of the standard, then the installation, at a minimum, shall conform to the requirements of the Michigan elevator laws and rules and the applicable code requirements.

(2) The alteration shall not begin until a permit is obtained from the department and the elevator shall not be placed into service until it has been inspected and tested in the presence of a general elevator inspector, except as provided in section 15 of the act.

History: 2003 AACS.

CHAPTER 5. ASME A90-1 MODIFICATIONS

R 408.7069 Applicability of national standard and rules of board.

Rule 69. (1) This rule applies to manlifts, as described in the ASME A90.1-2009, which is adopted by reference in R 408.7003, that are used only to carry plant personnel in granaries, flour mills, parking garages, and similar buildings or occupancies. Belt manlifts shall not be used by the public and, if located in buildings to which the public has access, shall be located in an enclosure that is protected by self-closing, spring-locked doors. Keys to the doors shall be available to employees. The use of belt manlifts during construction is prohibited.

(2) The hoistway enclosure shall comply with the Michigan building code, R 408.30401 to R 408.30547, and shall maintain the fire rating of the structure.

(3) The travel of any single belt manlift installed after February 14, 1968 shall not exceed 100 feet.

History: 2003 AACS; 2005 AACS; 2010 AACS; 2014 AACS.

CHAPTER 6. ANSI A10.4 MODIFICATIONS

R 408.7070 Rescinded.

History: 2003 AACS; 2005 AACS; 2010 AACS.

R 408.7071 Location.

Rule 71. Section 5.4.8 of the ANSI A10.4 standard is amended to read as follows:

5.4.8. (1) A personnel hoist must be installed not less than 10 feet from any other lifting or lowering apparatus except other personnel hoists.

(2) A hoistway may not be located either partially or wholly over sidewalks or passageways.

(3) If tower cranes or any other lifting or lowering apparatus are installed such that the boom, load, or trolley may go over or into the 10-foot restricted area, then the personnel hoist must be unoccupied anytime the boom**,** or trolley passes over the restricted area. The

evacuation of the personnel hoist must be the responsibility of the crane operator and the general contractor.

History: 2003 AACS; 2010 AACS; 2014 AACS; 2023 AACS.

R 408.7072 Hoistway doors and gates.

Rule 72. Section 6.2.2 of the ANSI A10.4 standard is amended to read as follows:

6.2.2 (1) Each hoistway door shall be equipped with an approved interlock.

(2) Sliding doors and gates shall be constructed of metal and shall be of a design which will reject a ball 1-1/2 inches in diameter.

History: 2003 AACS.

R 408.7073 Rescinded.

History: 2003 AACS; 2010 AACS.

R 408.7074 Car enclosure tops.

Rule 74. Section 17.7 of the ANSI A10.4 standard is amended to read as follows:

17.7 Tops of car enclosures shall be so designed and installed to be capable of sustaining a load of 300 pounds (136 kg) on any square area 2 feet (0.6 m) on a side and 100 pounds (45 kg) applied at any point. Simultaneous application of these loads is not required. The personnel hoist shall have overhead protection equivalent to 2-inch plank. The planks shall be secured.

The exit cover shall be hinged and locked and open outward.

History: 2003 AACS.

R 408.7075 Use of winding drum machines.

Rule 75. Section 22.2 of the ANSI A10.4 standard is amended to read as follows:

22.2 Winding drum machines may be used irrespective of car travel if the drums are grooved for hoisting wire rope. Grooves shall be machine finished and shall be of the helical or parallel type. Only 1 layer of rope may be on the drum.

History: 2003 AACS.

R 408.7076 Car speed.

Rule 76. Section 22.3 of the ANSI A10.4 standard is amended to read as follows:

22.3 The rated speed shall not be more than 300 feet per minute.

History: 2003 AACS.

R 408.7077 Emergency stop switch.

Rule 77. Section 24.2.4 of the ANSI A10.4 standard is amended to read as follows:

24.2.4 An emergency stop switch shall be provided in the car and located in or adjacent to the car operating panel. When opened, the switch shall cause the electric power to be removed from the hoist driving-machine motor and brake. Emergency stop switches shall have all of the following characteristics:

(1) Manually opened and closed type.

(2) Red operating handles or buttons.

(3) Conspicuously and permanently marked "stop."

(4) Positively opened mechanically and the opening shall not be solely dependent on springs.

(5) Capability of being locked out of use when the operator leaves the car.

(6) Operation of the emergency stop switch shall not require manual resetting of the control panels.

History: 2003 AACS.

R 408.7078 Voltages permitted in hoistway or on car.

Rule 78. Section 24.3.1 of the ANSI A10.4 standard is amended to read as follows:

24.3.1 The maximum system or circuit potential permitted on any equipment in the hoistway or on the car shall be not more than 600 volts. If the potential exceeds 120 volts, then either a grounding conductor shall be incorporated in the traveling cable or a separate grounding conductor shall be installed. A visual indicator shall be included in the grounding circuit, so arranged as to indicate continuously the continuity of the grounding conductor. The type and size of the grounding conductor and the grounding fastening means shall conform to the requirements of the Michigan electrical code. The grounding circuit shall include a device which will interrupt the electric circuit to the load if a ground fault occurs.

History: 2003 AACS.

R 408.7079 Rated load safety test.

Rule 79. Section 26.4.8 of the ANSI A10.4 standard is amended to read as follows:

26.4.8 A rated load safety test, as required by section 26.2.1.1 of the ANSI A10.4 standard, must be performed by a licensed elevator contractor in the presence of a general elevator inspector every 90 days. Periodic inspections may be conducted every 30 days and the appropriate fees assessed at the discretion of the department.

History: 2003 AACS; 2023 AACS.

R 408.7080 Operation.

Rule 80. Section 30 of the ANSI A10.4 standard is amended to read as follows:

30 Hoists shall be operated in compliance with the manufacturing specifications, rules and recommendations, and with the governing authority. This shall consist of items, functions, and criteria pertaining to the hoist use and shall be a part of an operational maintenance and inspection log. Either of the following signal systems shall be provided:

(a) An approved signal device to enable persons on each landing to signal the operator to stop and an emergency bell to signal the operator to return to the bottom landing.

(b) An approved type voice communication system between the car and landings and the project manager or job site superintendent's office.

History: 2003 AACS; 2010 AACS.

R 408.7081 Authorized uses.

Rule 81. Section 30.1 of the ANSI A10.4 standard is amended to read as follows:

30.1 (1) Only workers and other authorized personnel associated with the work being done may ride on a personnel hoist.

(2) A personnel hoist may be used for carrying materials if it is designed and installed for the type of load to be used and if no passengers are carried during the time materials are being carried except those necessary to handle the materials.

(3) The load on a personnel hoist shall not exceed the maximum rated load established by the department.

(4) Hoists shall be operated by competent, qualified, and authorized personnel using manual operating devices of the continuous pressure type located inside the hoist car only.

History: 2003 AACS; 2010 AACS.

R 408.7081a Operators.

Rule 81a. Section 30.3 of the ANSI A10.4 standard is amended to read as follows:

30.3 The user shall ensure that the operators are knowledgeable and capable of performing the duties outlined in the operating manual and are capable of recording such activity in their log. A list certifying the training of any operator must be kept in the on-site documentation. Only authorized personnel listed in that document may operate the lift.

History: 2010 AACS; 2023 AACS.

CHAPTER 7. SEWER LIFT STATION PERSONNEL ELEVATORS

R 408.7082 Applicability.

Rule 82. The rules in this subpart apply to electric powered elevators used in sewage lift stations.

History: 2003 AACS.

R 408.7083 Public access.

Rule 83. A sewage lift station personnel elevator shall not be accessible to the general public and shall be limited to use by employees only.

History: 2003 AACS.

R 408.7084 Location, counterweights, and speed.

Rule 84. (1) The elevator may be installed in the entrance well.

(2) When counterweights and buffers are provided, the applicable rules shall apply.

(3) The rated speed of a car shall not exceed 35 feet per minute.

History: 2003 AACS.

R 408.7085 Guarding exposed equipment.

Rule 85. Exposed gears, sprockets, tape or rope sheaves, drums of selectors, floor controllers, signal machines and the ropes, chains or tapes for driving them shall be guarded to protect against accidental contact.

History: 2003 AACS.

R 408.7086 Supports and foundations.

Rule 86. (1) Machines, machinery, and sheaves shall be supported and maintained in place so as to prevent any part from becoming loose or displaced.

(2) Supporting beams shall be of steel. Beams are not required under machines, sheaves and machinery, or control equipment which are supported on floors provided that the floors are designed and installed to support the load imposed on the floor.

History: 2003 AACS.

R 408.7087 Distance from car platform to floor level.

Rule 87. The distance from the top of a car platform at the lowest landing shall be not more than 20 inches above the floor level. The means of descent from the car platform shall not constitute a hazard.

History: 2003 AACS.

R 408.7088 Car and counterweight clearances.

Rule 88. (1) If a car platform is level with the lowest landing, then the car buffer striker plates shall not be in contact with the buffers.

(2) If the car is at its extreme limit of normal travel, then there shall be not less than 6 inches between the top of the car crosshead and the nearest obstruction.

(3) If the counterweights are resting on their buffers, then there shall be not less than 3 inches between the top of the car crosshead and the nearest obstruction.

(4) If the car is resting on its buffers there shall be not less than 3 inches clearance between the top of the counterweights and the nearest obstruction.

(5) The clearances between the car and the hoistway enclosure, hoistway sill, or any obstruction shall be not less than 3/4 inch.

(6) The clearance between the car platform sill and hoistway edge shall be not more than 5 inches.

(7) The underside of a projection into the hatch shall be beveled at an angle of not less than 75 degrees with the horizontal unless protected by a safety device to stop the ascending car.

(8) The top of the lower landing entrance shall be provided with a safety device to stop the ascending car if for any reason an overhanging obstruction on the car comes in contact with a shear hazard.

History: 2003 AACS.

R 408.7089 Landing openings.

Rule 89. (1) If an upper landing side entrance door is provided, then the entrance shall be not less than 6 1/2 feet in height.

(2) The top of the hoistway shall be provided with an overlapping, self-locking hinged cover designed to lock the closed side entrance door when the lift station is unoccupied.

History: 2003 AACS.

R 408.7090 Locking devices.

Rule 90. (1) The hinged cover and the upper landing side entrance door, when provided, shall be provided with a mechanical latch and an electrical contact designed to be operated from inside the hoistway.

(2) A locking device shall be provided to prevent the top hinged cover from locking the upper landing side entrance door when the lift station is occupied.

History: 2003 AACS.

R 408.7091 Guide rails.

Rule 91. (1) A car and counterweight shall be provided with guide rails of steel.

(2) A guide rail shall be securely fastened with through bolts or clips of strength, design, and spacing as follows:

(a) A guide rail and its fastenings shall not deflect more than 1/4 inch under normal operations.

(b) A guide rail and its fastenings shall withstand the application of the safety when stopping the car with a rated load or when stopping the counterweights.

(c) A guide rail shall rest on supports and extend at the top of the hoistway to prevent the guide shoes from running off the guide rail if the car or the counterweight travels beyond the terminal landings.

History: 2003 AACS.

R 408.7092 Frames, enclosures, platforms, capacity, and final limits.

Rule 92. (1) A car frame and platform shall be of metal. Frame members shall be securely bolted and braced. The factor of safety shall not be less than 4 with a uniformly distributed rated load.

(2) The car shall be enclosed to the extent necessary to afford reasonable protection.

(3) The platform area shall not exceed 5 square feet.

(4) The rated capacity shall be not less than 300 pounds.

(5) The limit of travel for the elevator shall be not more than 50 feet.

History: 2003 AACS; 2010 AACS.

R 408.7093 Emergency exits.

Rule 93. A car shall be provided with an emergency exit giving egress from the car to an emergency ladder from any location in the hoistway and shall be provided with electrical contacts to prevent movement of the car while the emergency exit is open.

History: 2003 AACS.

R 408.7094 Safeties and governors.

Rule 94. (1) A car shall be provided with a car safety capable of stopping and sustaining the car with a rated load.

(2) The car safety shall be of the inertia or other type approved by the board, operated as a result of the breakage of the hoisting mechanism or by a speed governor. A governor of the speed-governor type shall operate to set the safety at a speed of not more than 175 feet per minute and on breakage of the suspension means. The safety shall operate without appreciable delay and independently of the governor speed action.

(3) If a speed governor is used, then it shall be located where there is sufficient space for full movement of the governor parts and where the governor cannot be struck by the car or counterweight in case of overtravel.

(4) A safety operated switch shall be provided to open the motor-control circuit and the brake-control circuit before or at the time the safety applies.

(5) A governor rope shall be of iron, steel, Monel Metal, or phosphor bronze not less than 1/4 inch in diameter. Tiller-rope construction shall not be used for a governor rope.

(6) An elevator of the winding-drum type or roller chain drive type shall be provided with a slack-rope device of the manually reset type which will remove the power from the motor and brake if the car is obstructed in its descent and the hoisting chain or rope slackens.

(7) A car safety device which depends upon completion of maintenance of an electric circuit for application of the safety shall not be used. A car safety shall be applied mechanically.

(8) Cast iron shall not be used in construction of any part of a car safety, the breakage of which would result in failure of the safety to function to stop and sustain the car.

(9) A test of a car safety shall be made with a rated load in the car before the elevator is put into service. Governor operation of an instantaneous-type safety shall be tested at rated speed by tripping the governor by hand. A safety operated as the result of the breaking of the hoisting mechanism shall be tested by obtaining the necessary slack rope to cause it to function.

(10) An overspeed governor shall be provided for a traction machine.

History: 2003 AACS.

R 408.7095 Driving machines and sheaves.

Rule 95. (1) A sprocket, winding drum, traction sheave and overhead and deflecting sheave shall be of cast iron or steel. The diameter of a sheave shall not be less than 30 times the diameter of the wire hoisting rope. The rope grooves shall be machined, except where 8 x 19 steel ropes are used.

Where 8 x 19 steel ropes are used, the diameter of drums and sheaves may be reduced to 21 times the diameter of the rope.

(2) The factor of safety, based on the static load, that is, the rated load plus the weight of the car or chains, ropes and counterweights, to be used in the design of a driving machine and sheave, shall be not less than either of the following:

(a) Eight for wrought iron and steel.

(b) Ten for cast iron, cast steel, and other material.

(3) A set screw fastening shall not be used instead of a key or pin if the connection is subject to torque or tension.

(4) A friction-gearing or clutch mechanism shall not be used for connecting the sprockets, drum, or sheaves to the main driving gear.

(5) Worm gearing having cast-iron teeth shall not be used.

(6) A driving machine shall be equipped with an electrically released spring-applied brake.

(7) A single ground or short circuit, a counter-voltage, or a motor field discharge shall not prevent the brake magnet from allowing the brake to set when the operating device is placed in the stop position.

History: 2003 AACS.

R 408.7096 Terminal stopping devices.

Rule 96. (1) Upper and lower normal terminal stopping devices operated by a car shall be provided and shall be set to stop the car at, or near, the upper and lower terminal landings. Upper and lower final terminal stopping devices operated by the car shall also be provided and shall be set to stop the car before it strikes either the overhead or obstruction at the

lower floor level. A final terminal stopping device shall be provided on and operated by the driving machine of the winding drum type.

(2) The final terminal stopping device shall act to prevent movement of the car in both directions of travel. The normal and final terminal stopping devices shall not control the same switches on the controller unless 2 or more separate and independent switches are provided, 2 of which shall be closed to complete the motor and brake circuit in each direction of travel.

History: 2003 AACS.

R 408.7097 Operation and operation devices.

Rule 97. (1) The operation at top and bottom landings shall be of the constant pressure type.

(2) The car operating device shall be of the constant pressure push button type with the face of the button not to project beyond the face of the button plate. The device shall be of the 2-hand control type.

(3) An emergency stop switch shall be provided on or adjacent to the car operating panel. A stop switch shall be of the manually opened and manually closed type with a red handle or button and conspicuously marked "Stop." Spring failure shall not prevent opening of the switch where springs are used.

History: 2003 AACS.

R 408.7098 Control and operating circuits.

Rule 98. The design and installation of the control and operating circuits shall conform to all of the following:

(a) A control system which depends on completion or maintenance of an electric circuit shall not be used for any of the following:

(i) Interruption of the power and application of machine brake at the terminals.

(ii) Stopping of the car when the emergency stop switch in the car is opened or when any of the electrical protective devices operate.

(iii) Stopping the machine when the safety applies.

(b) A spring used to actuate a switch, contactor, or relay to break the circuit to stop a car at the terminal shall be of the compression type.

(c) The failure of a single magnetically operated switch or relay or contactor to release or operate in the intended manner, or the occurrence of a single accidental ground, shall not permit the car to run.

History: 2003 AACS.

R 408.7099 Hoisting cables.

Rule 99. (1) Only iron, low carbon steel, or steel wire cables with fibre cores, having the commercial classification "elevator wire cable," shall be used for suspension of an elevator

car and counterweights. The wire material for a cable shall be manufactured by the open-hearth or electric furnace process or their equivalent.

(2) Suspension means shall be not less than 2 iron or steel wire cables having a diameter of not less than 1/4 inch.

(3) The factor of safety of the suspension means shall be not less than 7.

(4) The arc of contact of a wire rope on a traction sheave shall be sufficient to produce adequate traction under all load conditions.

(5) A wire rope anchored to a winding drum shall have not less than 1 full turn of rope on the drum when the car or counterweight has reached its limit of possible overtravel.

(6) A car or counterweight wire rope shall not be lengthened or repaired by splicing.

(7) The winding-drum end of a car and counterweight wire rope shall be secured by a clamp on the inside of the drum.

(8) The car or counterweight end of a wire rope shall be fastened by return loop, by individual tapered babbitted sockets, or by an alternate method approved by the board. A clamp of the U-bolt type shall not be used.

History: 2003 AACS.

R 408.7100 Hoisting chains.

Rule 100. (1) Only roller chain made of high quality alloy, heat treated steel with the following characteristics is acceptable for hoisting chains:

(a) Prestressed.

(b) Shot peened.

(c) In-line blanking.

(d) Deep case hardening of pins and bushings.

(2) Suspension means shall not be less than 2 separate roller chains, each chain having a tensile strength of not less than 3,500 pounds.

(3) The factor of safety of the suspension means shall be not less than 7.

(4) A chain shall have not less than 6 inches of chain available beyond the normal stopping point when the car has reached its extreme limits of travel.

(5) A chain end shall be fastened by standard master links.

History:

R 408.7101 Wiring and lighting.

Rule 101. (1) Electric wiring shall be in rigid metal conduit or electrical metallic tubing.

(2) A traveling cable used between the car and hoistway wiring shall be in compliance with the Michigan electrical code.

(3) A fused disconnect main line switch externally operated shall be provided adjacent to the controller.

(4) Hoistway lighting shall be provided.

History: 2003 AACS.

R 408.7102 Inspection and tests.

Rule 102. (1) An existing installation and a new elevator installation, after being placed in service, shall be subjected to maintenance inspections and tests.

(2) Maintenance inspections and tests of elevator car and counterweight safeties and governors shall be made at intervals of not more than 12 months.

(3) The owner or owner's authorized agent shall have maintenance inspections and tests made by a person qualified to perform them in the presence of an inspector in the employ of or authorized by the department, except where such an inspector is not available. When the required tests are made, the person or firm conducting the tests shall do both of the following:

(a) Submit to the department a statement upon a form furnished by it certifying that the tests have been conducted and further certifying to the results thereof.

(b) Attach to the governor rope a tag marked to show the date of the test and the name of the person or firm who conducted it.

(4) The distance between any 100 continuous links of roller chain, measured from centerline of pin, shall not be more than + or - 1% of the rated pitch of the chain being tested. For example, 100 links of standard series single strand #40 roller chain, which has a pitch length of 1/2 inch shall not be more than 50 1/2 inches or less than 49 1/2 inches.

(5) The inspection of chain links shall be made at not less than 3 points picked at random.

History: 2003 AACS.

R 408.7103 Reshackling of hoisting ropes of drum-type machines.

Rule 103. The hoisting ropes of a power elevator having a drum-type driving machine with 1-to-1 roping shall be reshackled at the car ends at intervals not more than 24 months for a machine located below or at the side of the hoistway.

History: 2003 AACS.

R 408.8101 Rescinded.

History: 1979 AC; 2003 AACS.

Editor's note: Former R 408.8101 -- R 408.8107 transferred to R 408.3901 -- R 408.3907.

R 408.8103 Rescinded.

History: 1979 AC; 1981 AACS; 1985 AACS; 1992 AACS; 1996 AACS; 2003 AACS.

R 408.8108 Rescinded.

History: 1979 AC; 1981 AACS; 1985 AACS; 1992 AACS; 1996 AACS; 2003 AACS.

R 408.8111 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8121 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8122 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8123 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8124 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8131 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8132 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8133 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8134 Rescinded.

History: 1979 AC; 1985 AACS; 1996 AACS; 2003 AACS.

R 408.8135 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8136 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8137 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8138 Rescinded.

History: 1979 AC; 1981 AACS; 2003 AACS.

R 408.8139 Rescinded.

History: 1996 AACS; 2003 AACS.

R 408.8141 Rescinded.

History: 1979 AC; 1990 AACS; 1996 AACS; 2003 AACS.

R 408.8145 Rescinded.

History: 1979 AC; 1981 AACS; 2003 AACS.

R 408.8149 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8150 Rescinded.

History: 1979 AC; 1985 AACS; 2003 AACS.

R 408.8151 Rescinded.

History: 1979 AC; 1982 AACS; 1987 AACS; 1992 AACS; 2002 AACS; 2003 AACS.

R 408.8152 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8153 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8161 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8171 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8191 Rescission.

Rule 191. The code for elevators, dumbwaiters, and escalators, being R 408.231 to R 408.473 of the Michigan Administrative Code and appearing on pages 4616 to 4675 of the 1954 volume of the Code, and the Michigan elevator code, being R 408.10001.0 to R 408.11714.3 of the Michigan Administrative Code and appearing on pages 475 to 698 of the 1957 Annual Supplement to the Code, are rescinded.

History: 1979 AC.

R 408.8201 Rescinded.

History: 1979 AC; 1981 AACS; 1996 AACS; 2003 AACS.

R 408.8202 Rescinded.

History: 1996 AACS; 2003 AACS.

R 408.8203 Rescinded.

History: 1979 AC; 1981 AACS; 2003 AACS.

R 408.8205 Rescinded.

History: 1979 AC; 1985 AACS; 1996 AACS; 2003 AACS.

R 408.8206 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8211 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8212 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8213 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8214 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8215 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8216 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8217 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8218 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8219 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8220 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8221 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8222 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8223 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8224 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8225 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8226 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8227 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8228 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8229 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8230 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8231 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8232 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8233 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8234 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8235 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8236 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8237 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8238 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8241 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8242 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8243 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8244 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8245 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8246 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8247 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8248 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8249 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8250 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8251 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8252 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8253 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8254 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8255 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8256 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8257 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8258 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8259 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8260 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8261 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8262 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8263 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8264 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8265 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8266 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8267 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8268 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8269 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8270 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8271 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8281 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8282 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8283 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8284 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8285 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8286 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8287 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8288 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8289 Rescinded.

History: 1954 ACS 53, Eff. Feb. 14, 1968; 1979 AC; 2003 AACS.

R 408.8290 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8291 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8292 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8293 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8294 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8296 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8301 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8302 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8303 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8304 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8305 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8306 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8307 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8308 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8309 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8310 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8311 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8312 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8313 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8321 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8322 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8323 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8324 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8325 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8326 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8327 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8328 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8329 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8341 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8361 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8362 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8363 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8364 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8365 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8401 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8403 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8411 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8415 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8421 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8422 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8423 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8424 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8425 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8426 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8427 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8428 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8429 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8430 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8431 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8432 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8433 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8434 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8435 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8436 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8437 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8438 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8439 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8440 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8441 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8451 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8452 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8453 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8454 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8455 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8456 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8457 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8458 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8459 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8460 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8461 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8462 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8463 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8464 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8465 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8466 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8467 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8468 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8469 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8470 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8471 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8472 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8473 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8474 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8475 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8476 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8477 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8478 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8481 Rescinded.

History: 1979 AC; 1992 AACS; 2003 AACS.

R 408.8482 Rescinded.

History: 1954 ACS 53, Eff. Feb. 14, 1968; 1954 ACS 82, Eff. Feb. 7, 1975.

R 408.8483 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8484 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8485 Rescinded.

History: 1979 AC; 1992 AACS.

R 408.8486 Rescinded.

History: 1979 AC; 1992 AACS.

R 408.8487--R 408.8491 Rescinded.

History: 1954 ACS 53, Eff. Feb. 14, 1968; rescinded 1954 ACS 82, Eff. Feb. 7, 1975.

R 408.8492 Rescinded.

History: 1979 AC; 1992 AACS.

R 408.8493 Rescinded.

History: 1979 AC; 1992 AACS.

R 408.8494--R 408.8503 Rescinded.

History: 1954 ACS 53, Eff. Feb. 14, 1968; rescinded 1954 ACS 82, Eff. Feb. 7, 1975.

R 408.8511 Rescinded.

History: 1979 AC; 1985 AACS; 2003 AACS.

R 408.8512 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8513 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8514 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8515 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8516 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8517 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8518 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8519 Rescinded.

History: 1954 ACS 53, Eff. Feb. 14, 1968; rescinded 1954 ACS 82, Eff. Feb. 7, 1975.

R 408.8519a Rescinded.

History: 1985 AACS; 2003 AACS.

R 408.8520 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8521 -- R 408.8523 Rescinded.

History: 1954 ACS 53, Eff. Feb. 14, 1968; rescinded 1954 ACS 82, Eff. Feb. 7, 1975.

R 408.8523a Rescinded.

History: 1985 AACS; 2003 AACS.

R 408.8524 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8525 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8531 Rescinded.

History: 1979 AC; 1981 AACS; 1982 AACS; 1992 AACS; 1996 AACS; 2003 AACS.

R 408.8532 Rescinded.

History: 1979 AC; 1992 AACS; 1996 AACS; 2003 AACS.

R 408.8533 Rescinded.

History: 1979 AC; 1982 AACS; 1992 AACS; 1996 AACS; 2003 AACS.

R 408.8534 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8535 Rescinded.

History: 1979 AC; 1982 AACS; 1992 AACS; 1996 AACS; 2003 AACS.

R 408.8536 Rescinded.

History: 1979 AC; 1982 AACS; 1992 AACS; 1996 AACS; 2003 AACS.

R408.8536a Rescinded.

History: 1996 AACS; 2003 AACS.

R 408.8537 Rescinded.

History: 1979 AC; 1982 AACS; 1992 AACS.

R 408.8537a Rescinded.

History: 1982 AACS; 1992 AACS; 1996 AACS; 2003 AACS.

R 408.8538 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8539 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8540 Rescinded.

History: 1979 AC; 1982 AACS; 1996 AACS; 2003 AACS.

R 408.8540a Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8540b Rescinded.

History: 1982 AACS; 1996 AACS; 2003 AACS.

R 408.8540c Rescinded.

History: 1996 AACS; 2003 AACS.

R 408.8541 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8542 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8543 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8544 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8545 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8546 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8547 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8548 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8549 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8550 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8551 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8552 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8553 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8554 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8555 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8556 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8561 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8562 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8563 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8571 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8572 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8573 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8574 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8575 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8576 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8577 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8578 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8579 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8580 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8581 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8582 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8583 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8585 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8587 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8588 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8589 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8590 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8591 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8592 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8595 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8596 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8601 Rescinded.

History: 1979 AC; 1981 AACS; 1996 AACS; 2003 AACS.

R 408.8611 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8612 Rescinded.

History: 1979 AC; 1981 AACS.

R 408.8613 Rescinded.

History: 1979 AC; 1981 AACS; 2003 AACS.

R 408.8614 Rescinded.

History: 1979 AC; 1981 AACS; 2003 AACS.

R 408.8615 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8616 Rescinded.

History: 1979 AC; 1981 AACS.

R 408.8617 Rescinded.

History: 1979 AC; 1981 AACS; 2003 AACS.

R 408.8618 Rescinded.

History: 1979 AC; 1981 AACS; 1996 AACS; 2003 AACS.

R 408.8619 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8620 Rescinded.

History: 1981 AACS; 2003 AACS.

R 408.8621 Rescinded.

History: 1981 AACS; 2003 AACS.

R 408.8631 Rescinded.

History: 1979 AC; 1981 AACS; 2003 AACS.

R 408.8632 Rescinded.

History: 1979 AC; 1981 AACS.

R 408.8632a Rescinded.

History: 1985 AACS; 2003 AACS.

R 408.8633 Rescinded.

History: 1979 AC; 1981 AACS.

R 408.8634 Rescinded.

History: 1979 AC; 1981 AACS; 1996 AACS; 2003 AACS.

R 408.8635 Rescinded.

History: 1979 AC; 1981 AACS.

R 408.8635a Rescinded.

History: 1979 AC; 1981 AACS.

R 408.8636 Rescinded.

History: 1979 AC; 1981 AACS.

R 408.8636a Rescinded.

History: 1979 AC; 1992 AACS; 2003 AACS.

R 408.8637 Rescinded.

History: 1979 AC; 1981 AACS.

R 408.8638 Rescinded.

History: 1979 AC; 1981 AACS; 2003 AACS.

R 408.8639 Rescinded.

History: 1979 AC; 1981 AACS; 1996 AACS; 2003 AACS.

R 408.8639a Rescinded.

History: 1979 AC; 1985 AACS.

R 408.8639b Rescinded.

History: 1979 AC; 1985 AACS; 1996 AACS; 2003 AACS.

R 408.8641 Rescinded.

History: 1979 AC; 1981 AACS; 2003 AACS.

R 408.8642 Rescinded.

History: 1979 AC; 1981 AACS; 1996 AACS; 2003 AACS.

R 408.8643 Rescinded.

History: 1979 AC; 1981 AACS; 1996 AACS; 2003 AACS.

R 408.8644 Rescinded.

History: 1979 AC; 1981 AACS; 1996 AACS; 2003 AACS.

R 408.8645 Rescinded.

History: 1979 AC; 1981 AACS; 1996 AACS.

R 408.8646 Rescinded.

History: 1979 AC; 1981 AACS.

R 408.8647 Rescinded.

History: 1979 AC; 1981 AACS; 1996 AACS.

R 408.8648 Rescinded.

History: 1979 AC; 1981 AACS; 1996 AACS; 2003 AACS.

R 408.8661 Rescinded.

History: 1979 AC; 1981 AACS; 1985 AACS; 1996 AACS; 2003 AACS.

R 408.8662 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8663 Rescinded.

History: 1979 AC; 1981 AACS.

R 408.8664 Rescinded.

History: 1979 AC; 2003 AACS.

R 408.8671 Rescinded.

History: 1979 AC; 1981 AACS; 1985 AACS; 1992 AACS; 2003 AACS.

R 408.8672 Rescinded.

History: 1979 AC; 1981 AACS; 1985 AACS; 1992 AACS.

R 408.8673 Rescinded.

History: 1979 AC; 1981 AACS.

R 408.8674 Rescinded.

History: 1979 AC; 1981 AACS; 1996 AACS.

R 408.8681 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8682 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8683 Rescinded.

History: 1979 AC; 1996 AACS; 2003 AACS.

R 408.8684 Rescinded.

History: 1979 AC; 1996 AACS.

R 408.8685 Rescinded.

History: 1979 AC; 1996 AACS.

R 408.8690 Rescinded.

History: 1981 AC; 1996 AACS.

R 408.8691 Rescinded.

History: 1981 AC; 1996 AACS; 2003 AACS.

R 408.8691a Rescinded.

History: 1996 AACS; 2003 AACS.

R 408.8691b Rescinded.

History: 1996 AACS; 2003 AACS.

R 408.8692 Rescinded.

History: 1996 AACS; 2003 AACS.

R 408.8693 Rescinded.

History: 1981 AACS; 2003 AACS.

R 408.8694 Rescinded.

History: 1981 AACS; 2003 AACS.

R 408.8695 Rescinded.

History: 1981 AACS; 2003 AACS.