

**DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS**

**DIRECTOR'S OFFICE**

**GENERAL INDUSTRY SAFETY STANDARDS**

(By authority conferred on the director of the department of licensing and regulatory affairs by sections 16 and 21 of 1974 PA 154, MCL 408.1016 and 408.1021, and Executive Reorganization Order Nos. 1996-2, 2003-1, 2008-4, and 2011-4, MCL 445.2001, 445.2011, 445.2025, and 445.2030)

**PART 74. FIRE FIGHTING**

**R 408.17401 Scope.**

Rule 7401. This part prescribes rules for training; for the construction, care, and use of equipment; and for the safeguards to be furnished and maintained as it relates to municipal fire service personnel and equipment.

The occupation can be full-time or part-time; for pay or volunteer status.

History: 1979 AC; 2001 AACCS.

**R 408.17402 Applicability.**

Rule 7402. A person who is functioning as a municipal fire fighter and who is exposed to the hazards of an emergency operation shall comply with this part.

History: 1979 AC; 1988 AACCS.

**R 408.17403. Definitions; A to M.**

Rule 7403. (1) "Approved label" means a label or other identifying mark of a nationally recognized testing laboratory, such as underwriters laboratory, inc., or factory mutual research corporation, that maintains a periodic inspection of production of labeled equipment or materials and by whose labeling compliance with nationally recognized standards or tests to determine suitable usage in a specified manner is indicated.

(2) "Aerial apparatus" means a fire department vehicle which is equipped with a power operated extension ladder or elevating platform used for rescue, ventilation, elevated master streams, and gaining access to upper levels and which carries ground ladders, tools, and other equipment.

(3) "Control" means the limitation of worker exposure to exhaust emissions to levels not exceeding applicable MIOSHA exposure limits.

(4) "Controlled process" means an arrangement of equipment to control exhaust emissions by means of any of the following:

(a) A point of source capture of exhaust emissions by a mechanical tailpipe exhaust ventilation system.

(b) A general mechanical exhaust ventilation system in a fire apparatus building bay or bays.

(c) A device that is permanently installed directly on the fire apparatus exhaust system.

(5) “Emergency operations” means a fire or nonfire incident, including, but not limited to, rescues, extrications, hazardous material release, and natural disasters, where fire department response can be anticipated and which subject fire personnel to personal injury or hazards. Vegetative cover fires are not included in this definition.

(6) “Exhaust emissions” means exhaust by-products of combustion, from internal combustion engines, capable of causing occupational illness or disease to a person.

(7) “Fire apparatus” means mobile fire fighting equipment such as, but not limited to, a pumper/engine, aerial apparatus, a tanker/tender, or any other similar equipment that has fire suppression or rescue as its primary use. A vehicle not designed, equipped, or utilized for emergency operations is not fire apparatus.

(8) “Fire station” means a structure in which fire service equipment is housed and employees may be quartered.

(9) “Fire service personnel” means all employees who are engaged in fire suppression, fire inspection, or fire investigation or who are subjected to the hazards of emergency operations.

(10) “Head protection” means a fire fighter’s helmet and hood.

(11) “Ladder pipe” means a large capacity water delivery device attached to an aerial ladder.

(12) “Municipal” means any public entity.

History: 1979 AC; 1988 AACS; 2001 AACS; 2013 AACS.

#### **R 408.17404. Definitions; O to V.**

Rule 7404. (1) “Operator’s control station” means a work station where the operator of apparatus, such as an aerial ladder or pumper, is stationed.

(2) “Personal alert safety systems (PASS)” means a device that is certified as being in compliance with these rules, that senses movement or lack of movement, and that automatically activates an audible alarm signal (which can also be manually activated to alert and to assist others in locating a fire fighter or emergency services person who is in danger).

(3) “Platform control station” means a work station where the rider of an elevating platform is stationed.

(4) “Positive-pressure breathing apparatus” means a self-contained breathing apparatus in which the pressure in the breathing zone is positive in relation to the immediate environment during inhalation and exhalation.

(5) “Primary control station” means a work station where the operator of apparatus that has an aerial ladder or platform is stationed.

(6) “Protective ensemble” means multiple elements of clothing and equipment designed to provide a degree of protection for fire service personnel from adverse exposures to the inherent risks of structural fire fighting operations and other emergency operations.

(7) “Roof ladder” means a ladder equipped with folding hooks. The hooks provide a means of anchoring the ladder to the roof ridge or other roof part.

(8) “Stay poles” also called tormenters, mean poles attached to the rails of the long extension ladders to aid in the raising and supporting of the ladder.

(9) “Structural fire fighting” means activities of rescue, fire suppression, and property conservation in buildings, enclosed structures, aircraft, vehicles, vessels, or like properties that are involved in a fire or emergency situation.

(10) “Training” means the process of making fire service personnel proficient through instruction or hands-on practice, or both, in the operation and care of equipment that is expected to be used and in the performance of assigned duties.

(11) “Volunteer” means a person who is permitted to work as, and who is trained as, a member of an organized fire department.

History: 1979 AC; 1988 AACS; 2001 AACS; 2013 AACS.

#### **R 408.17405. Adopted and referenced standards.**

Rule 7405. (1) The following National Fire Protection Association standards are adopted by reference in these rules and are available from the National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, Massachusetts, 02269-9101, or via the internet at web-site: [www.nfpa.org](http://www.nfpa.org), at a cost as of the time of adoption of these amendments, as stated in these rules.

(a) NFPA 1901: standard for “Automotive Fire Apparatus,” 2009 edition. Cost: \$50.50.

(b) NFPA 1983: standard on “Fire Service Life Safety Rope and System Components,” 1995 edition. Cost: \$27.00.

(c) NFPA 1971: standard on “Protective Ensemble for Structural Fire Fighting,” 2007 edition. Cost: \$48.50.

(d) NFPA 1981: standard on “Open Circuit Self-contained Breathing Apparatus for Fire Fighter,” 1997 edition. Cost: \$43.00.

(e) NFPA 1982: standard on “Personal Alert Safety System (PASS) for Fire Fighters,” 1998 edition. Cost: \$39.00.

(2) Copies of the standards adopted in these rules may be obtained from the publisher or may be obtained from the Department of Licensing and Regulatory Affairs, MIOSHA Regulatory Services Section, 530 West Allegan Street, P.O. Box 30643, Lansing, Michigan , 48909-8143, at the cost charged in these rules plus \$20.00 for shipping and handling.

(3) The following Michigan Occupational Safety and Health Administrative standards are referenced in these rules. Up to 5 copies of these standards may be obtained at no charge from the Michigan Department of Licensing and Regulatory Affairs, MIOSHA Regulatory Services Section, 530 West Allegan Street, P.O. Box 30643, Lansing, Michigan, 48909-8143 or via the internet at website: [www.michigan.gov/mioshastandards](http://www.michigan.gov/mioshastandards). For quantities greater than 5, the cost, as of the time of adoption of these rules, is 4 cents per page.

(a) General Industry Safety Standard Part 4 “Portable Ladders,” R 408.10401 to R 408.10456.

(b) General Industry Safety Standard Part 33 “Personal Protective Equipment,” R 408.13301 to R 408.13398.

(c) General Industry Safety Standard Part 72 “Automotive Service Operations,” R 408.17201 to R 408.17253.

(d) Occupational Health Standard Part 380 “Occupational Noise Exposure,” R 325.60101 to R 325.60128.

(e) Occupational Health Standard Part 451 “Respiratory Protection,” R 325.60051 to R 325.60052.

(f) Occupational Health Standard Part 472 “Medical Services and First Aid,” R 325.47201.

History: 2001 AACCS; 2013 AACCS; 2016 MR 8, Eff. April 19, 2016.

Editor's Note: An obvious error in R 408.17405 was corrected at the request of the promulgating agency, pursuant to Section 56 of 1969 PA 306, as amended by 2000 PA 262, MCL 24.256. The rule containing the error was published in *Michigan Register*, 2016 MR 8. The memorandum requesting the correction was published in *Michigan Register*, 2016 MR 8.

#### **R 408.17411. Duties of employer.**

Rule 7411. (1) An employer shall comply with all of the following requirements:

(a) Provide initial and continuing training to an employee commensurate with and specific to the duties and functions that the employee is expected to perform. The training shall be provided before the employee is permitted to perform emergency operations.

(b) Assure that prospective fire service personnel are physically fit and have the ability to perform assigned emergency operations.

(c) Assure that job-required equipment and tools are maintained free of recognized defects that could cause an injury.

(d) Develop a basic procedure that covers the treatment and transport of injured employees from the emergency scene to a medical facility.

(e) Provide in the workplace first aid supplies/kits appropriate for the hazard history, to minimally comply with the requirements of the Occupational Health Standard Part 472 “Medical Services and First Aid,” as referenced in R 408.17405.

(f) Comply with the requirements of this part, review with, and make available a copy of this part for employees.

(2) An employer shall prepare and maintain a statement or written policy which establishes its basic organizational structure and which establishes the type, amount, frequency of training to be provided to fire service personnel, and maintain training records. The organizational statement and training records shall be available for inspection by the director of the department of licensing and regulatory affairs or his or her authorized representative and by an employee or his or her authorized representative.

History: 1979 AC; 1988 AACCS; 1993 AACCS; 2001 AACCS; 2013 AACCS; 2016 MR 8, Eff. April 19, 2016.

#### **R 408.17412. Duties of employee.**

Rule 7412. An employee shall do all of the following:

- (a) Use personal protective equipment as prescribed by this part.
- (b) Report defective equipment, tools, and hazardous conditions to a supervisor.
- (c) Not remove safeguards from equipment except when necessary to service. The safeguard or equivalent shall be replaced before returning the equipment to operation.
- (d) Not use equipment and tools unless trained in their use and authorized to do so.
- (e) Only perform those duties that he or she is trained to do.

History: 1979 AC; 2013 AACCS.

**R 408.17415. Fire station safety.**

Rule 7415. (1) The area within 3 feet of the slide pole on all sides shall be maintained free of any obstruction. A floor-to-ceiling wall shall not be construed to be an obstruction.

(2) A cushioned mat, not less than 3 feet in diameter, shall be located around the base of the slide pole at all times.

(3) A dormitory and any means of egress from the dormitory, apparatus bay, and aiseways shall be equipped with an emergency lighting system which shall be automatically activated in case of power failure. The system may be operated by battery or generator.

(4) Switches and electrical equipment located in the shower or other areas subject to hazards created by moisture shall be approved for the location or removed to a nonhazardous area.

(5) All sleeping quarters shall be equipped with an operational smoke detection device and an operational carbon monoxide detection device.

(6) All new construction or significantly remodeled facilities (50% or more area) that house fire apparatus shall install a controlled process exhaust ventilation system that will effectively control exhaust emissions created by the fire apparatus and will assure that employee exposures to the exhaust emissions do not exceed applicable MIOSHA exposure limits. If a general mechanical exhaust ventilation system is utilized, then a mechanical air supply system shall be provided if its absence will result in building negative pressures sufficient to cause back drafting of vents from fuel-fired equipment.

(7) All equipment used for the control of exhaust emissions from fire apparatus shall be used, inspected, and maintained in accordance with the manufacturer's recommendations.

History: 1979 AC; 1988 AACCS; 2001 AACCS; 2013 AACCS.

## **CONSTRUCTION AND USE OF EQUIPMENT**

**R 408.17421. Fire apparatus generally.**

Rule 7421. (1) Fire apparatus shall be able to stop within 30 feet after application of the brakes at 20 miles per hour.

(2) Fire apparatus shall be equipped with all of the following items:

- (a) Windshield wipers.
- (b) Head, tail, stop, and backup lights and a backup alarm.
- (c) Horn and siren.
- (d) Slip-resistant steps, tailboard, and work platforms.
- (e) Seat belts for all seated employees. Seat belts shall be used while the apparatus is in motion.

(f) If an employee is allowed by the employer to ride the apparatus in an unseated position while the apparatus is in motion, then the employer shall provide for, and enforce the use of, a safety harness.

(3) New fire apparatus that is manufactured and purchased after the effective date of these rules shall comply with the requirements of the NFPA 1901: standard for "Automotive Fire Apparatus," 2009 edition, as adopted in R 408.17405.

(4) Except on instructions of a designated signalperson, an operator of fire apparatus shall not move the equipment when his or her vision is obstructed.

(5) A minimum distance of 10 feet from unprotected energized equipment or high-voltage transmission lines, as distinguished from low voltage secondary lines and series streetlight construction, shall be maintained when using fire apparatus. The training of fire service personnel shall include development of the ability to recognize and identify primary, high-voltage transmission lines and series street lighting construction.

History: 1979 AC; 1988 AACS; 1993 AACS; 2001 AACS; 2013 MR 8, Eff. April 17, 2013; 2013 MR 11, Eff. June 12, 2013; 2016 MR 8, Eff. April 19, 2016.

#### **R 408.17422. Fire apparatus tires and rims.**

Rule 7422.(1) A thorough visual inspection of the tread and sidewall areas of fire apparatus tires for cuts, cracks, splits, or bruises, including a tread depth measurement, shall be made at least annually. A record of this inspection shall be maintained for a minimum of 10 years.

(2) A tire shall be replaced if 1 of the following occurs:

- (a) The average tread depth is worn to 5/32 of an inch or less.
- (b) The tread depth at any 1 location is 2/32 of an inch, or less.
- (c) A cut or crack exposes the cord fabric.

(3) A replacement tire shall meet or exceed the standards of the original tire furnished with the apparatus.

(4) Fire apparatus tires and rims shall be inspected inside at least once every 10 years.

(5) All breakdown of fire apparatus tires shall comply with General Industry Safety Standard Part 72 "Automotive Service Operations," as referenced in R 408.17405.

History: 1979 AC; 1988 AACS; 2001 AACS; 2013 AACS; 2016 MR 8, Eff. April 19, 2016.

#### **R 408.17423. Fire apparatus with elevating platforms.**

Rule 7423.(1) When an aerial apparatus platform is elevated, parking brakes shall be set and stabilizing jacks or outriggers and safety locks shall be used. When needed, ground plates shall be used under the jack or outriggers.

(2) An instructional information plate, which is clearly visible to the operator, shall be located at the operator's control station. If the aerial is equipped with a platform, then a plate shall also be located at the platform control station. The plate shall contain all of the following information:

(a) Rated capacity of the aerial tip or platform.

(b) Operating controls identified for motion.

(c) Cautions or restrictions of operation.

(3) An operator shall comply with all of the following provisions:

(a) Remain at the primary control station when the aerial ladder or platform is occupied.

(b) Not move the apparatus unless the ladder or platform is in the bed of the apparatus.

(c) Maintain clearances as required in R 408.17421(5).

History: 1979 AC; 1988 AACCS; 2001 AACCS; 2013 AACCS; 2016 MR 8, Eff. April 19, 2016.

#### **R 408.17424. Aerial apparatus.**

Rule 7424. (1) An aerial apparatus that is equipped with a ladder shall not have the ladder extended or retracted when an employee is positioned on the ladder.

(2) While working from an aerial apparatus, an employee shall be secured with a safety belt system as referenced in NFPA 1983: standard on "Fire Service Life Safety Rope and System Components," 1995 edition, as adopted in R 408.17405.

(3) The tip of the aerial ladder shall not be forcefully extended against a solid object or used to support the ladder.

(4) The steps and rungs of an aerial apparatus shall have a slip-resistant surface.

(5) Jacks, outriggers, and safety locks shall be used as required in R 408.17423 (1).

(6) The rated capacity for an aerial apparatus shall not be exceeded.

(7) The operator of an aerial ladder shall comply with all of the following provisions:

(a) Remain at the primary control station when the ladder is occupied.

(b) Communicate to occupant of ladder prior to movement.

(c) Not move the apparatus unless the ladder is in the bed.

(8) The operator of an aerial ladder shall maintain clearances as required in R 408.17421(5).

(9) The controls for the operation of an aerial apparatus shall be of a type that returns to a neutral position when released.

(10) Tools or equipment shall not be mounted or installed on the turntable.

(11) A 2-way voice communication system shall be provided between the employee on the raised portion of the equipment and the operator control station.

(12) Detachable ladder pipes shall be operated in the direction the ladder is facing.

(13) Ladder pipes shall be secured to the ladder so that the pipe cannot be accidentally dislodged while in operation.

(14) An employer shall follow the manufacturer's instructions and recommendations for the use, testing, and maintenance of aerial apparatus.

History: 1979 AC; 1988 AACCS; 2001 AACCS; 2013 AACCS; 2016 MR 8, Eff. April 19, 2016.

**R 408.17425 Rescinded.**

History: 1979 AC; 2001 AACCS.

**R 408.17426. Portable ladders.**

Rule 7426. (1) Except as otherwise required by these rules, a portable ladder shall be constructed, used, and maintained to comply with General Industry Safety Standard Part 4 "Portable Ladders," as referenced in R 408.17405.

(2) The rung spacing shall be not less than 12 inches nor more than 16 inches.

(3) The rungs of a metal ladder shall have a slip-resistant surface.

(4) A roof ladder assembly shall be capable of supporting a direct load of not less than 500 pounds.

(5) Stay poles or tormenters shall be furnished on any wood ladder that extends more than 36 feet. The spikes on stay poles shall not project beyond the end of the ladder when nested. The locking pins on stay poles shall be securely attached to the ladders.

(6) Portable ladders which are mounted more than 4 feet in height and less than 7 feet in height on a fire apparatus, and which have ends that extend beyond the ladder's mounting surface or compartment shall be protected from contact.

History: 1979 AC; 1988 AACCS; 2001 AACCS; 2013 AACCS; 2016 MR 8, Eff. April 19, 2016.

**R 408.17427 Line throwing guns.**

Rule 7427. (1) A line throwing gun shall:

(a) Be loaded just prior to firing time.

(b) Not be pointed, loaded or unloaded at any person.

(c) Not be left unattended or stored while loaded.

(d) Be stored in a box with the cleaning kit and breakdown tools.

(2) The storage box shall have the words, "Explosive Tool," conspicuously printed on the top of the box.

History: 1979 AC.

**R 408.17428 Storage of equipment.**

Rule 7428. All equipment shall be stored in or on the fire apparatus in a safe manner.

History: 1979 AC.

## PROTECTIVE EQUIPMENT

### **R 408.17431. Personal protective equipment.**

Rule 7431. (1) An employer shall assure that all emergency service personnel use personal protective equipment appropriate for the exposure involved when performing emergency operations.

(2) Personal protective equipment shall be provided by the employer at no cost to the employee and shall comply with the requirements of this part.

(3) An employer shall assure that personal protective equipment protects the head, body, and extremities and consists of at least all of the following components:

- (a) Foot and leg protection.
- (b) Hand protection.
- (c) Body protection.
- (d) Face, eye, and head protection.

(4) Personal protective equipment that is required by these rules to comply with the requirements of a nationally recognized standard shall either bear an approved label of, or be certified in writing by, the manufacturer as being in compliance with the applicable standard.

(5) Head protection and eye protection shall be provided for, and used by, persons who ride in cabs or tiller seats that are not enclosed.

(6) Personal protective equipment that is used by more than 1 employee shall be cleaned or sanitized before reassignment.

(7) Personal protective equipment shall be inspected by the user after each use.

(8) An employer shall implement procedures for inspecting and servicing personal protective equipment, particularly following fires or other emergency usage. The procedures employed for such servicing, such as product washing or other cleaning, shall comply with the manufacturer's recommendations.

(9) An employer shall implement a procedure for determining whether personal protective equipment shall be repaired or replaced. All repairs shall be made in compliance with the manufacturer's recommendations.

(10) Respiratory equipment devices shall be inspected by the user after each use. Malfunctioning or damaged components or units shall be repaired by the manufacturer or a person who is certified by the manufacturer or shall be replaced.

History: 1979 AC; 1988 AACS; 1993 AACS; 2001 AACS; 2013 AACS.

### **R 408.17432. Protective clothing for emergency operations.**

Rule 7432. An employer shall provide both protective coats and protective trousers, or a protective coverall, to all employees who engage in or are exposed to fire hazards of emergency operations. The protective coat, trouser, and coverall shall meet the applicable requirements of NFPA 1971: standard on "Protective Ensemble for Structural Fire Fighting," 2007 edition, as adopted in R 408.17405.

History: 1988 AACS; 1993 AACS; 2001 AACS; 2013 AACS; 2016 MR 8, Eff. April 19, 2016.

**R 408.17433. Head, eye, and face protection.**

Rule 7433. (1) An employer shall do all of the following:

(a) Provide primary head, face, and eye protection appropriate for a given specific hazard to all employees exposed, or potentially exposed, to the specific hazard. An employer shall assess potential emergency operation scenes to determine what hazards requiring head, face, and eye protection are present, or likely to be present, and match the protective device to the particular hazard. An employer shall have and implement written operational procedures specific to the type of hazard to which an employee may be exposed.

(b) Maintain head, face, and eye protection in a location of readiness for immediate response to structural fires or other emergency operations.

(c) Ensure that protective eye and face devices that comply with General Industry Safety Standard Part 33 “Personal Protective Equipment,” as referenced in R 408.17405, are used by emergency service personnel when performing operations where the hazards of flying or falling materials that might cause eye and face injuries are present.

(2) While conducting emergency operations, the requirement of face and eye protection shall be met by helmet face shield, if equipped, and primary eye protection, or breathing apparatus face piece, or primary eye protection and secondary means of face protection. An employer shall provide helmets to all employees who engage in or are exposed to the hazards of structural fire fighting. The helmets shall meet the requirements of NFPA 1971 “Protective Ensemble for Structural Fire Fighting,” 2007 edition, as adopted in R 408.17405.

(3) An employer shall provide protective hoods to all employees who engage in or are exposed to fire hazards of emergency operations. The protective hoods shall meet the applicable requirements of NFPA 1971 “Protective Ensemble for Structural Fire Fighting,” 2007 edition, as adopted in R 408.17405.

History: 1979 AC; 1988 AACS; 1993 AACS; 2001 AACS; 2013 AACS; 2016 MR 8, Eff. April 19, 2016.

**R 408.17434. Foot and leg protection.**

Rule 7434. An employer shall provide foot and leg protection to all employees who engage in or are exposed to the hazards of emergency operations. The foot and leg protection shall meet the applicable requirements of NFPA 1971 “Protective Ensemble for Structural Fire Fighting,” 2007 edition, as adopted in R 408.17405.

History: 1979 AC; 1988 AACS; 1993 AACS; 2001 AACS; 2013 AACS; 2016 MR 8, Eff. April 19, 2016.

**R 408.17435. Hand protection.**

Rule 7435. An employer shall provide hand protection to all employees who engage in or are exposed to the hazards of emergency operations. The hand protection shall meet

the applicable requirements of NFPA 1971 “Protective Ensemble for Structural Fire Fighting,” 2007 edition, as adopted in R 408.17405.

History: 1979 AC; 1988 AACS; 1993 AACS; 2001 AACS; 2013 AACS; 2016 MR 8, Eff. April 19, 2016.

**R 408.17436. Respirator protection devices.**

Rule 7436. (1) An employer shall have a written respiratory protection program to address the safe use of respirators in dangerous atmospheres that may be encountered in emergency operations, that complies with Occupational Health Standard Part 451 “Respiratory Protection,” as referenced in R 408.17405.

(2) An employer shall assure that self-contained breathing apparatus for use by fire service personnel is of the positive pressure type. All breathing apparatus that is purchased after the effective date of these rules shall comply with NFPA 1981 “Open Circuit Self-Contained Breathing Apparatus for Fire Fighters,” 1997 edition, as adopted in R 408.17405.

(3) Subrule (2) of this rule does not prohibit the use of a self-contained breathing apparatus where the apparatus can be switched from a demand mode to a positive pressure mode when an employee is performing emergency operations.

History: 1979 AC; 1988 AACS; 1993 AACS; 2001 AACS; 2013 AACS; 2016 MR 8, Eff. April 19, 2016.

**R 408.17437. Hearing protection.**

Rule 7437. An employer shall comply with Occupational Health Standard Part 380 “Occupational Noise Exposure,” as referenced in R 408.17405.

History: 2001 AACS; 2013 AACS; 2016 MR 8, Eff. April 19, 2016.

**R 408.17440 Personal alert safety system (PASS).**

Rule 7440. An employer shall provide and enforce the use of a Personal Alert Safety System (PASS) device to each employee utilizing a self-contained breathing apparatus while engaged in structural fire fighting operations. "PASS" devices shall meet the requirements of NFPA 1982 "Personal Alert Safety System (PASS) for Fire Fighters," 1998 edition, as adopted in R 408.17405.

History: 2001 AACS; 2016 MR 8, Eff. April 19, 2016.

**TOOLS**

**R 408.17441 Explosive devices.**

Rule 7441. (1) An explosive device shall not be used in an explosive or flammable atmosphere.

(2) A fire service which uses an explosive device shall develop a procedure for protecting the employees and general public.

History: 1979 AC.

**R 408.17442 Using, covering, or protecting tools.**

Rule 7442. (1) Chain saws that are specifically designed for firefighting operations to cut holes in roofs, floors, and walls shall be used where cutting operations are performed. If a chain saw is not in use, then the cutting teeth of the chain saw shall be covered to prevent inadvertent contact.

(2) An axe or other sharp-edged or pointed tool shall be protected when stored or carried on the apparatus. A rounded tipped pike pole is excluded from the requirements of this subrule.

History: 1979 AC; 1993 AACS; 2001 AACS.

**R 408.17443 Air-moving equipment.**

Rule 7443. Air-moving equipment exposed to flammable or explosive fumes, dust, or vapors shall be powered by an explosion proof motor and labeled as such.

History: 1979 AC.

## OPERATIONS

**R 408.17451. Management of emergency operations.**

Rule 7451. (1) Each fire department shall establish and implement written procedures for emergency operations. The written procedures shall include all of the following:

(a) A requirement that a nationally recognized incident management system be implemented at each emergency.

(b) A requirement that a personnel accountability system be implemented at each emergency.

(c) A statement that the procedures apply to all employees who are operating at the emergency.

(d) A requirement for initial training and annual refresher training in emergency operations and the incident management system.

(e) A requirement that the procedures shall comply with the “two in/two out” rules as found in R 1910.134(g)(4), as adopted in Occupational Health Standard Part 451 “Respiratory Protection,” as referenced in R 408.17405.

(2) A trained employee shall function as the incident commander at each emergency.

History: 1979 AC; 1993 AACCS; 2001 AACCS; 2013 AACCS; 2016 MR 8, Eff. April 19, 2016.

**R 408.17452 Rescinded.**

History: 1979 AC; 1988 AACCS; 2001 AACCS.

## INSPECTIONS

**R 408.17461. Inspection of fire apparatus and equipment; record of repair or replacement; lifeline guns and explosive devices; apparatus and equipment involved in accident; equipment testing.**

Rule 7461.(1) All of the following items of the fire apparatus, if so equipped, shall be inspected for proper operation and for defects at least once a month:

- (a) Windshield washers and wipers.
- (b) Defroster and heater.
- (c) Head, tail, stop, backup, and flasher lights.
- (d) Backup alarm.
- (e) Horn and siren.
- (f) Slip-resistant steps and platforms.
- (g) Tires, rims, and suspension system.
- (h) Steering mechanism.
- (i) Braking system.
- (j) Operational controls.

Inspection records shall be maintained for a minimum period of 24 months for the apparatus.

(2) Records of repair or replacement shall be maintained for the life of the apparatus.

(3) Lifeline guns and explosive devices shall be cleaned and made ready for operation after each use.

(4) All portable equipment carried on a fire apparatus shall be inspected for operation and for defects at least monthly and within 24 hours after any use. Inspection records shall be maintained for a minimum period of 24 months for portable equipment.

(5) All equipment carried on fire apparatus or designated for training shall be tested at least annually in accordance with manufacturers' instructions and applicable standards.

(6) Fire fighting apparatus and equipment found to be defective or in unserviceable condition shall be removed from service or repaired or replaced.

History: 1979 AC; 1993 AACCS; 2013 MR 8, Eff. April 17, 2013; 2013 MR 11, Eff. June 12, 2013; 2016 MR 8, Eff. April 19, 2016.

**R 408.17462 Rescinded.**

History: 1979 AC; 1988 AACCS.



**R 408.17463. General utility ropes, life safety ropes, harnesses, and hardware.**

Rule 7463. (1) All life safety ropes, harnesses, and hardware used by employees shall meet the requirements of NFPA 1983 “Fire Service Life Safety Rope and System Components,” 1995 edition, as adopted in R 408.17405.

(2) During fall arrest or repelling operations, an employee shall ensure that life safety harnesses are used as specified in NFPA 1983 “Fire Service Life Safety Rope and System Components,” 1995 edition, as adopted in R 408.17405.

(3) Natural fiber ropes shall be inspected visually after each use for all the following conditions:

(a) Externally for abrasions, cut or broken fibers, decay, burns, lack of strength, softness, variation in size or roundness of the strands, and for mildew or mold.

(b) Internally annually, by separating the strands at 3-foot intervals, for broken fibers, presence of grit, mildew or mold, color change of the fibers, or powdering and short, loose fibers.

(4) A natural fiber rope that has any of the conditions described in subrule (3)(a) and (b) of this rule shall be replaced or repaired.

(5) Synthetic rope shall be inspected visually after each use for all of the following conditions:

(a) Abrasions.

(b) Cut or broken fibers.

(c) Burns.

(d) Melted fibers.

(e) Variations in the size or roundness of the strands.

(6) A synthetic rope that has any of the conditions specified in subrule (5) of this rule shall be replaced or returned to the manufacturer for repair.

History: 1979 AC; 2001 AACS; 2103 AACS; 2016 MR 8, Eff. April 19, 2016.

**R 408.17464 Rescinded.**

History: 1979 AC; 1993 AACS; 2001 AACS.