

DEPARTMENT OF CONSUMER AND INDUSTRY SERVICES
BUREAU OF SAFETY AND REGULATION
GENERAL INDUSTRY SAFETY STANDARDS COMMISSION

(By authority conferred on the general industry safety standards commission by sections 16 and 21 of Act No. 154 of the Public Acts of 1974, as amended, being SS408.1016 and 408.1021 of the Michigan Compiled Laws)

PART 73. FIRE BRIGADES

R 408.17301 Scope.

Rule 7301. This standard is applicable to fire brigades, industrial fire departments, and private or contractual-type fire departments when established by an employer, and provides for the organization, training, and personal protective equipment to be used. This standard does not apply to airport crash rescue operations or forest fire fighting operations.

History: 1984 AACCS.

R 408.17303 Definitions; A to E.

Rule 7303. (1) "Approved" means approval by the director of the department of consumer and industry services or his or her duly designated representative.

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

(3) "Education" means the process of imparting knowledge or skill through systematic instruction. "Education" does not require formal classroom instruction.

(4) "Enclosed structure" means a structure that has a roof or ceiling and not less than 2 walls that may present fire hazards to employees, such as accumulations of smoke, toxic gases, and heat similar to those found in buildings.

History: 1984 AACCS; 1998-2000 AACCS.

R 408.17305 Definitions; F to I.

Rule 7305. (1) "Fire brigade" means a private or industrial fire department consisting of an organized group of employees who are knowledgeable, trained, and skilled in at least basic fire fighting operations.

(2) "Flame resistance" means the property of materials, or combinations of component materials, that retards ignition and restricts the spread of flame.

(3) "Helmet" means a head protective device consisting of a rigid shell, energy absorption system, and chin strap intended to be worn to provide protection of the head, or portions thereof, against impact, flying or falling objects, electric shock, penetration, heat, and flame.

(4) "Incipient stage fire" means a fire which is in the initial or beginning stage and which can be controlled or extinguished by portable fire extinguishers, class II standpipe, or small hose systems.

(5) "Interior structural fire fighting" means the physical activity of fire suppression or rescue, or both, inside of buildings or enclosed structures which are involved in a fire situation beyond the incipient stage.

History: 1984 AACCS.

R 408.17307 Definitions; L to P.

Rule 7307. (1) "Lining" means a material permanently attached to the inside of the outer shell of a garment for the purpose of thermal protection and padding.

(2) "Maintenance" means the performance of services on fire protection equipment and systems and fire fighting equipment to assure that they will perform as expected in the event of fire. Maintenance differs from inspection in that maintenance requires the checking of internal fittings, devices, and agent supplies.

(3) "Outer shell" means the exterior layer of material on the fire coat and protective trousers which forms the outermost barrier between the fire fighter and the environment. The outer shell is attached to the vapor barrier and lining and is usually constructed with a storm flap, suitable closures, and pockets.

(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.

History: 1984 AACS.

R 408.17309 Definitions; Q to V.

Rule 7309. (1) "Quick disconnect valve" means a device which starts the flow of air by inserting the hose from the facepiece into the regulator of the self-contained breathing apparatus and stops the flow of air by disconnecting the hose from the regulator.

(2) "Training" means the process of making proficient through instruction and hands-on practice in the operation of equipment that is expected to be used and in the performance of assigned duties.

(3) "Vapor barrier" means the material used to prevent or substantially inhibit the transfer of water, corrosive liquids, or steam or other hot vapors from the outside of the garment to the wearer's body.

History: 1984 AACS.

R 408.17310 Employer responsibilities.

Rule 7310. (1) The employer having a fire brigade shall prepare and maintain a statement or written policy which establishes the existence of a fire brigade; and the basic organizational structure; the type, amount, and frequency of training to be provided to fire brigade members; the expected number of members in the fire brigade; and the functions that the fire brigade is to perform at the workplace. The organizational statement shall be available for inspection by the director of the department of consumer and industry services and by employees or their designated representatives.

(2) The employer shall assure that employees who are expected to do structural fire fighting are physically capable of performing duties which may be assigned to them during emergencies. The employer shall not permit employees with known heart disease, epilepsy, or emphysema to participate in fire brigade emergency activities unless a physician's certificate of the employees' fitness to participate in such activities is provided. For employees assigned to fire brigades before the effective date of this part, this rule is effective on September 15, 1985. For employees assigned to fire brigades after the effective date of this part, this rule applies.

(3) The employer shall provide training and education for all fire brigade members commensurate with those duties and functions that fire brigade members are expected to perform. Such training and education shall be provided to fire brigade members before they perform fire brigade emergency activities. Fire brigade leaders and training instructors shall be provided with training and education which is more comprehensive than that provided to the general membership of the fire brigade.

(4) The quality of training and education programs for fire brigade members shall be similar to the training and programs conducted by such fire training schools as any of the following:

- (a) Maryland fire and rescue institute.
- (b) Iowa fire service extension.
- (c) West Virginia fire service extension.
- (d) Georgia fire academy.
- (e) New York state department, fire prevention and control.

- (f) Louisiana state university firemen training program.
 - (g) Michigan's Macomb community college, fire and emergency services training center.
 - (h) Michigan's Great Lakes fire training institute at Kellogg community college.
 - (i) Washington state's fire service training commission for vocational education.
- (5) The training and education program for oil refinery industry fire brigade members shall be similar in quality to the training and education program conducted by any of the following:
- (a) Macomb community college of Michigan, fire and emergency services training center.
 - (b) Michigan's Great Lakes fire training institute at Kellogg community college.
 - (c) Texas A & M university.
 - (d) Lamar university.
 - (e) Reno fire school.
 - (f) Delaware state fire school.
- (6) Training for incipient fires shall be similar to the training provided by the fire training schools listed in Subrule (4) of this rule or to the fire training for incipient fires offered by the school of labor and industrial relations at Michigan state university.
- (7) An employer shall assure that training and education is conducted frequently enough to ensure that each member of the fire brigade is able to perform the member's assigned duties and functions satisfactorily and in a safe manner so as not to endanger fire brigade members or other employees. All fire brigade members shall be provided with training at least annually. In addition, fire brigade members who are expected to perform interior structural fire fighting shall be provided with an education session or training at least quarterly.
- (8) An employer shall inform fire brigade members about special hazards, such as the storage and use of flammable liquids and gases, toxic chemicals, radioactive sources, and water reactive substances, to which they may be exposed during a fire and other emergencies. The fire brigade members shall also be advised of any changes that occur in relation to the special hazards.
- (9) An employer shall develop written procedures that describe the actions to be taken in situations involving special hazards and shall include these written procedures in the training and education program. An employer shall make the procedures available for inspection by fire brigade members.

History: 1984 AACS; 1998-2000 AACS.

R 408.17312 Fire fighting equipment.

Rule 7312. The employer shall maintain and inspect, at least annually, fire fighting equipment to assure the safe operational condition of the equipment. Portable fire extinguishers shall be inspected in accordance to R 408.10835 of Part 8. Portable Fire Extinguishers, and respirators shall be inspected at least monthly. Fire fighting equipment that is in damaged or unserviceable condition shall be removed from service and replaced.

History: 1984 AACS.

R 408.17314 Personal protective equipment generally.

Rule 7314. (1) The following requirements apply to those employees who perform interior structural fire fighting. The requirements do not apply to employees who use fire extinguishers or standpipe systems to control or extinguish fires only in the incipient stage.

(2) An employer shall provide, and ensure the use of protective clothing that is in compliance with the requirements of this part. An employer shall provide the clothing without cost to an employee. An employer shall assure that protective clothing ordered or purchased after the effective date of this part meets the requirements contained in this part. As new equipment is provided, an employer shall assure that all fire brigade members wear the equipment when performing interior structural fire fighting. An employer shall provide foot and leg protection. An employer shall ensure that protective shoes or boots that are worn in combination with protective trousers meet the requirements of R 408.17316.

(3) The employer shall assure that protective clothing protects the head, body, and extremities, and consists of at least the following components: foot and leg protection; hand protection; body protection; face, eye, and head protection.

History: 1984 AACS; 1998-2000 AACS.

R 408.17315 Foot and leg protection.

Rule 7315. (1) Foot and leg protection shall be provided and may be achieved by either of the following methods:

(a) Fully extended boots which provide protection for the legs.

(b) Protective shoes or boots worn in combination with protective trousers that meet the requirements of R 408.17316.

(2) An employer shall ensure that protective footwear meets the requirements of NFPA 1971-97, protective ensemble for structural fire fighting. NFPA 1971-97 is adopted by reference in these rules and may be purchased from the Michigan Department of Consumer and Industry Services, Standards Division, 7150 Harris Drive, P.O. Box 30643, Lansing, Michigan 48909, or from the National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, Massachusetts 02269-9101, (1-800-344-3555), at a cost as of the time of adoption of these rules of \$24.75.

History: 1984 AACS; 1998-2000 AACS.

R 408.17316. Body protection.

Rule 7316. (1) Body protection shall be coordinated with foot and leg protection to ensure full body protection for the wearer, which shall be achieved by 1 of the following methods:

(a) Wearing of a fire-resistive coat meeting the requirements of subrule (2) of this rule in combination with fully extended boots meeting the requirements of R 408.17315

(b) Wearing of fire-resistive coat in combination with protective trousers both of which meet the requirements of subrule (2) of this section.

(2) The performance, construction, and testing of fire-resistive coats and protective trousers shall be at least equivalent to the requirements of the national fire protection association standard NFPA 1971-97, protective ensemble for structural fire fighting. NFPA 1971-97 is adopted by reference in R 408.17315(2).

History: 1984 AACS; 1998-2000 AACS.

R 408.17317 Hand protection.

Rule 7317. Hand protection shall consist of protective gloves or a glove system that will provide protection against cuts, punctures, and heat penetration. Gloves or a glove system shall meet the requirements of NFPA 1971-97, protective ensemble for structural fire fighting. NFPA 1971-97 is adopted by reference in R 408.17315(2).

History: 1984 AACS; 1998-2000 AACS.

R 408.17318 Head, eye, and face protection.

Rule 7318. (1) Head protection shall consist of a protective head device that has ear flaps and a chin strap which meet the performance, construction, and testing requirements of NFPA 1971-97, protective ensemble for structural fire fighting. NFPA 1971-97 is adopted by reference in R 408.17315(2).

(2) Protective eye and face devices that comply with R 408.13301 et seq. shall be used by fire brigade members when performing operations where the hazards of flying or falling materials are present and might cause eye and face injuries. Protective eye and face devices provided as accessories to protective head devices (face shields) are permitted if the devices meet the requirements of R 408.13301 et seq. The provisions of R 408.13301 et seq. are available from the Michigan Department of Consumer and Industry Services, Standards Division, 7150 Harris Drive, P.O. Box 30643, Lansing, Michigan 48909.

(3) Full facepieces, helmets, or hoods of breathing apparatus that meet the requirements of R 408.13301 et. seq. are acceptable as meeting the eye and face protection requirements of this part.

History: 1984 AACCS; 1998-2000 AACCS.

R 408.17320 Respiratory protection devices.

Rule 7320. (1) An approved self-contained breathing apparatus that has a full facepiece shall be provided to and worn by fire service personnel while working in atmospheres where toxic products of combustion or an oxygen deficiency may be present. The apparatus shall also be worn during emergency situations involving toxic substances. An employer shall ensure that respirators are provided to and used by fire brigade members and that the respirators meet the requirements of 29 C.F.R. §1910.134 and this rule.

(2) Self-contained breathing apparatus shall have a minimum service life rating of 30 minutes in accordance with the methods and requirements of the national institute for occupational safety and health (NIOSH) except for escape self-contained breathing apparatus (ESCBA) used only for emergency purposes.

(3) All compressed air cylinders used with self-contained breathing apparatus shall meet department of transportation (DOT) requirements which are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 or the criteria of the national institute for occupational safety and health (NIOSH), Cincinnati Technical Center, 435 Elm Street, Suite 500, Cincinnati, Ohio 45202.

(4) Self-contained breathing apparatus shall be provided with an indicator that automatically sounds an audible alarm when the remaining service life of the apparatus is reduced to within a range of 20% to 25% of its rated service time.

(5) An employer shall ensure 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 amendatory rules shall be in compliance with the national fire protection association standard NFPA 1981-87, open circuit self-contained breathing apparatus. NFPA 1981-87 is adopted by reference in these rules and is available from the National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts 02269, (1-800-344-3555), or from the Michigan Department of Consumer and Industry Services, Standards Division, P.O. Box 30643, Lansing, Michigan 48909, at a cost as of the time of adoption of these amendatory rules of \$14.50.

(6) Subrule (5) of this rule does not prohibit the use of a self-contained breathing apparatus if the apparatus can be switched from a demand mode to a positive-pressure mode when fire service personnel are performing emergency operations. However, the apparatus shall be in the positive-pressure mode as required in Subrule (7) of this rule.

(7) Negative-pressure self-contained breathing apparatus which has a rated service life of more than 2 hours and which has a minimum protection factor of 5,000, as determined by an acceptable quantitative fit test performed on each individual, is acceptable for use only during interior structural fire fighting situations for which the employer demonstrates that long-duration breathing apparatus is necessary. Quantitative fit test procedure shall be available for inspection by the director of the department of consumer and industry services or his or her authorized representative. Such negative-pressure breathing apparatus will continue to be acceptable for 18 months after a positive-pressure breathing apparatus that has the same or a longer rated service life is certified by the national institute for occupational safety and health (NIOSH). After the 18-month period, all self-contained breathing apparatus used for long-duration situations shall be of the positive-pressure type.

History: 1984 AACCS; 1998-2000 AACCS.

R 408.17322 Rescinded.

History: 1984 AACCS; 1998-2000 AACCS.