
MIOSHA

Michigan Occupational Safety and Health Administration (MIOSHA)
Department of Labor and Economic Opportunity (LEO)

AGENCY INSTRUCTION

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MIOSHA-STD-22-1

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SUBJECT: Firefighting Standard

- I. Purpose. This instruction establishes enforcement policies and interpretations of the General Industry Safety and Health Standard, Part 74, Firefighting Standard.
- II. Scope. This instruction applies to the General Industry Safety and Health Division (GISHD) and the Consultation Education and Training (CET) Division.
- III. References.
 - A. Agency Instruction MIOSHA-COM-15-2, [Horizontal or Vertical Standards – Determining Application](#), as amended.
 - B. Agency Instruction MIOSHA-COM-04-1, [Multi-Employer Work Sites](#), as amended.
 - C. Federal Emergency Management Agency (FEMA), ICS 100, [Introduction to the Incident Command System](#).
 - D. FEMA, ICS 200, [Basic Incident Command System for Initial Response](#).
 - E. General Industry and Construction Safety and Health Standard Part 451. /R325.60051 et seq., [Respiratory Protection](#).
 - F. General Industry Safety and Health Standard Part 40. /R408.14001 et seq., [Safety-Related Work Practices](#).
 - G. General Industry Safety and Health Standard Part 74. /R408.17401 et seq., [Firefighting](#).
 - H. Michigan Department of Health and Human Services (MDHHS), [Automotive Ambulance Requirements](#).
 - I. MDHHS, [List of Approved Cardiopulmonary Resuscitation \(CPR\) Vendors](#).
 - J. [Michigan Fire Fighters Training Council](#) (MFFTC).
 - K. Michigan State Police (MSP) [Training](#).
 - L. [Michigan Occupational Safety and Health Act](#) (MIOSH Act), MCL 408.1001 et seq., P.A. 154 of 1974, as amended.
 - M. [MIOSHA Field Operations Manual \(FOM\)](#), as amended.
 - N. National Fire Protection Association (NFPA), 414 (2012 Edition), [Standard for Aircraft Rescue and Fire-Fighting Vehicles](#).
 - O. NFPA, 1001 (Current Edition), [Standard for Fire Fighter Professional Qualifications](#).

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- P. NFPA, 1041 (2012 Edition), [Standard for Fire and Emergency Services Instructor Professional Qualifications](#).
- Q. NFPA, 1403 (2018 Edition), [Standard on Live Fire Training Evolutions](#).
- R. NFPA, 1500 (Current Edition), [Standard on Fire Department Occupational Safety, Health, and Wellness Program](#).
- S. NFPA, 1561 (Current Edition), [Standard on Emergency Services Incident Management System and Command Safety](#).
- T. NFPA, 1582 (Current Edition), [Standard on Comprehensive Occupational Medical Program for Fire Departments](#).
- U. NFPA, 1901 (2009 Edition), [Standard for Automotive Fire Apparatus](#).
- V. NFPA, 1931 (1994 Edition), [Standard for Manufacturer's Design of Fire Department Ground Ladders](#).
- W. NFPA, 1932 (2015 Edition), [Standard on Use, Maintenance, and Service Testing of In-Service Fire Department Ground Ladders](#).
- X. NFPA, 1971 (2007 Edition), [Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting](#).
- Y. NFPA, 1971 (2013 Edition), [Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting](#).
- Z. NFPA, 1981 (1997 Edition), [Standard on Open-Circuit Self-Contained Breathing Apparatus \(SCBA\) for Emergency Service](#).
- AA. NFPA, 1981 (2007 Edition), [Standard on Open-Circuit Self-Contained Breathing Apparatus \(SCBA\) for Emergency Services](#).
- BB. NFPA, 1981 (2013 Edition), [Standard on Open-Circuit Self-Contained Breathing Apparatus \(SCBA\) for Emergency Services](#).
- CC. NFPA, 1982 (1998 Edition), [Standard on Personal Alert Safety Systems \(PASS\)](#).
- DD. NFPA, 1982 (2007 Edition), [Standard on Personal Alert Safety Systems \(PASS\)](#).
- EE. NFPA, 1982 (2013 Edition), [Standard on Personal Alert Safety Systems \(PASS\)](#).
- FF. NFPA, 1983 (2001 Edition), [Standard on Life Safety Rope and Equipment for Emergency Services](#).
- GG. [Natural Resources and Environmental Protection Act](#), MCL 324.101 et seq., P.A. 451 of 1994, as amended.

- HH. [Pollution Emergency Alert System](#) (PEAS) Hotline.
- IV. Distribution. MIOSHA Staff; Federal OSHA; S-drive Accessible; MIOSHA Messenger; and Internet Accessible.
- V. Next Review Date. To be reviewed in three (3) years from date of issuance.
- VI. Contact. [Tarah Kile](#), Director, CET Division and [Adrian Rocskay](#), Director, GISHD.
- VII. Originator. Barton G. Pickelman, Director
- VIII. Background. On June 10, 2019, MIOSHA received a request from the State Fire Marshal to update Part 74, [Firefighting](#) to add a reference to [NFPA 1403](#), Standard on Live Fire Training Evolutions to ensure [NFPA 1403](#) is complied with during all live fire training evolutions in Michigan. On July 31, 2020, the Michigan legislature amended the [MIOSH Act](#) to require the agency to promulgate rules regarding a firefighter’s use of firefighting foam concentrate containing intentionally added perfluoroalkyl substance (PFAS). MIOSHA also received feedback asking for greater clarity on Part 74’s training provisions.

In response, on June 21, 2022, MIOSHA revised Part 74, [Firefighting](#) to include new requirements for the use and handling of PFAS, education and training in general, and live fire training in particular. The revision also updated the referenced versions of adopted NFPA standards. The affected NFPA standards were those for life safety rope and equipment for emergency services; design of fire department ground ladders; use, maintenance, and service testing of in-service fire department ground ladders; protective ensembles for structural firefighting and proximity firefighting; open circuit SCBAs for emergency services; and PASS.

This instruction establishes MIOSHA’s enforcement policy for Part 74, [Firefighting](#). This instruction provides guidance where consensus standards are incorporated into Part 74 or where additional explanation would be useful to the industrial hygienist/safety officer (IH/SO). This agency instruction does not provide enforcement instructions for Part 74 rules that are more self-explanatory.

- IX. Other MIOSHA Standards Applicable to Firefighting. Part 74, [Firefighting](#) is not the only MIOSHA standard applicable to firefighting or a fire department. There are other MIOSHA standards that contain provisions that address firefighting-related activities. For example, Part 451, [Respiratory Protection](#), contains the requirements for “two-in/two-out” during interior structural firefighting. See [Appendix A](#) for a list of other standards that could apply to firefighting and fire departments. To determine whether the standard applicable to an activity is Part 74, [Firefighting](#) or one of the other standards, refer to the Agency Instruction MIOSHA-COM-15-2, [Horizontal or Vertical Standards – Determining Application](#), as amended.
- X. Application of Part 74, Firefighting.
 - A. Duties of Employer.
 - 1. R 408.17411(1)(a) requires that an employer ensure that prospective firefighters receive a pre-employment physical conducted by a physician

or other licensed health care professional (PLHCP) to ensure they have the ability to perform assigned emergency operations.

During a MIOSHA inspection, the IH/SO will evaluate the employer's compliance with the rule by conducting interviews of management and employees and reviewing the documentation from the PLHCP.

NOTE: This rule applies only to firefighters hired after June 21, 2022, the effective date of the revised standard. Nonetheless, employers should ensure that all firefighters, regardless of hire date, are physically fit to the extent necessary to meet the physical demands of firefighting. MIOSHA recommends as best practice that fire departments implement [NFPA 1582](#), Standard on Comprehensive Occupational Medical Programs for Fire Departments, to ensure the health and well-being of their firefighters.

The general duty clause can be used to cite an employer that does not conduct or abide by a medical evaluation (for ability to perform assigned emergency operations) for firefighters hired on or before June 21, 2022, or for a firefighter hired after June 21, 2022, whose medical condition has changed after their pre-employment physical. The exposure would be the physical demands of firefighting. The general duty clause citation typically requires an employee illness or injury, a medical emergency, or death as a result of an assigned emergency operation or training for the operation where both the firefighter had a known Category A medical condition and the employer had knowledge of the firefighter's Category A medical condition. A Category A medical condition is a medical condition that would preclude a person from performing as a member in a training or emergency operational environment by presenting a significant risk to the safety and health of the person or others, as outlined in Chapter 6, "Medical Evaluations of Candidates" of [NFPA 1582](#). The issuance of the general duty clause citation will follow the [MIOSHA FOM](#).

2. R 408.7411(1)(d) requires that an employer make available to employees a copy of Part 74, [Firefighting](#).

During a MIOSHA inspection, the IH/SO will evaluate the employer's compliance with the rule by checking to see if the employer has made Part 74, [Firefighting](#) available to employees and their representatives, whether via hard copy or electronic copy, either by providing employees with individual copies or through posting in a conspicuous place where notices to employees are customarily posted.

B. Fire Station Safety.

R 408.17415(6) requires that effective January 1, 2025, all new construction or significantly remodeled facilities (50% or more of the area remodeled) that house fire apparatus install a controlled process exhaust ventilation system that will effectively control exhaust emissions created by the fire apparatus. If a general mechanical exhaust ventilation system is utilized, then a mechanical air supply system shall be provided if its absence will result in the buildup of negative

pressures in the building sufficient to cause back drafting of vents from fuel-fired equipment.

General exhaust ventilation, also called dilution ventilation, is different from local exhaust ventilation because instead of capturing emissions at their source and removing them from the air, general exhaust ventilation allows the contaminant to be emitted into the workplace air and then dilutes the concentration of the contaminant to an acceptable level (e.g., to the permissible exposure limits (PEL) or below).

In general, for point sources of emissions (like tailpipe emissions), local exhaust ventilation is recommended over dilution ventilation because it is more efficient. In the case of vehicle tailpipe emissions, the recommended local exhaust ventilation consists of hoses attached to the tailpipe of the fire apparatus, and hoses lead to an exhaust fan that discharges the emissions outside the building.

During a MIOSHA inspection, the IH/SO will evaluate the employer's compliance with the rule as follows:

1. Ask if there has been any new construction or significant remodeling of the facility since January 1, 2025. If there has been any new construction, then the rule applies, and the IH/SO needs to take steps 2-7 below. If there has been no remodeling of the facility or the remodeled area accounts for less than 50% of the area of the facility, the rule would not apply. If there has been remodeling covering 50% or more of the area of the facility in square feet, the rule applies, and the IH/SO needs to take steps 2-7 below.

Example: For a remodeled facility, if the total square footage of the facility is 1,000 square feet, then for the rule to apply, the remodel must affect at least 500 square feet.

NOTE: If the remodeling occurs in stages, the square footage of the different stages would be combined rather than each individual stage being evaluated separately.

2. Determine if the employer has installed a controlled process exhaust ventilation system as defined in Part 74, [Firefighting](#). This may include a point-of-source capture of exhaust emissions by a mechanical tailpipe exhaust ventilation system or a general mechanical exhaust ventilation system. If negative building pressures are experienced as a result of the mechanical exhaust ventilation, then a makeup air unit would be required. One indication that a building is under negative pressure is that it takes more force than typical to open an exterior door to enter the building.

The IH can determine if the building is under negative pressure by using a smoke tube near the crack under a door or if the doorway is fully sealed by opening the door slightly to generate a small crack for smoke tube testing purposes. Hold the smoke tube near the crack and depress the bulb to expel smoke. If the smoke is drawn into the building, the building has negative pressure. If testing indicates the building is under negative

pressure, the IH can ask employees if it is usually difficult to open the door to enter the building.

3. The ventilation system installed by the employer will be considered effective at controlling exhaust emissions if exhaust emissions are controlled at or below applicable MIOSHA PEL. Part 74, [Firefighting](#) defines “control” as follows: “means the limitation of worker exposure to exhaust emissions to levels not exceeding applicable MIOSHA exposure limits.” The air contaminants in tailpipe emissions that have exposure limits are carbon monoxide, nitric oxide, nitrogen dioxide, formaldehyde, acrolein, acetaldehyde, and sulfur dioxide.
4. Determine if the employer has conducted any air monitoring for fire apparatus exhaust emissions. If monitoring has been conducted, review the results. The IH will also conduct their own air monitoring. The IH will determine ambient levels in employee-occupied areas and exposure when the fire apparatus is operating indoors. The IH will not rely solely on the employer’s own data.
5. Review the MIOSHA 300 log for any illnesses due to exposure to exhaust emissions and interview those employees (if still employed) to determine the circumstances.
6. Conduct interviews with management and employees to determine if vehicles are permitted to run indoors, and if so, what type of ventilation is provided (e.g., local exhaust ventilation, general mechanical ventilation, natural ventilation from open overhead garage doors) when vehicles are running.
7. Determine through employee and management interviews if any employee(s) have experienced negative health effects (e.g., headaches, eye, nose, or throat irritation) from exposure to fire apparatus exhaust emissions.

C. Fire Apparatus Generally.

1. R 408.17421(4) requires that all fire apparatus manufactured and purchased after April 17, 2013, meet or exceed the requirements of the [NFPA 1901](#), Standard for Automotive Fire Apparatus, 2009 edition, as adopted in R 408.17405.

During a MIOSHA inspection, the IH/SO will evaluate the employer’s compliance with this rule by first determining if the fire apparatus was manufactured and purchased after April 17, 2013. If the apparatus was not, then this rule does not apply. If the fire apparatus is covered by the rule, then the IH/SO will identify the type of fire apparatus. Fire apparatus types include pumper, initial attack, mobile water supply, aerial, quint, special service, and mobile foam. Trailers used for emergency response are also covered under this rule.

NOTE: Wildland fire apparatus are not covered under this rule. Fire apparatus with a gross vehicle weight rating (GVWR) of less than 10,000 pounds are not covered under this rule. MIOSHA will accept aircraft rescue and fire-fighting (ARFF) vehicles that meet or exceed the requirements of [NFPA 414](#), Standard for Aircraft Rescue and Fire-Fighting Vehicles, 2012 edition, as being compliant with this rule. MIOSHA will accept automotive ambulances that meet or exceed the [requirements](#) of the MDHHS as being compliant with this rule. All fire apparatus must comply with the requirements under R 408.17421(2) regardless of manufacture or purchase date.

To determine if the fire department is in compliance with [NFPA 1901](#), the IH/SO will verify that the operations and service documentation provided with each fire apparatus is available. For each fire apparatus, the IH/SO will check if the employer is in possession of its certificate of full compliance with [NFPA 1901](#), or alternatively, a Statement of Exceptions specifically describing each aspect of the fire apparatus that is not fully compliant with [NFPA 1901](#) at the time of delivery. If a Statement of Exceptions is provided, the IH/SO will review the document to determine if the fire department has implemented the necessary modifications to the fire apparatus that directly impact firefighter health and safety to ensure compliance with [NFPA 1901](#).

In addition, the IH/SO will conduct a visual inspection of the fire apparatus to ensure the following items are included with the fire apparatus: one approved, dry chemical portable fire extinguisher with a minimum 80-B:C rating, one spare SCBA cylinder for each SCBA carried, one first aid kit, one traffic vest for each seating position, five fluorescent orange traffic cones, five illuminated warning devices, and one automatic external defibrillator (AED). Fire apparatus equipped with an aerial device with a permanently mounted ladder must carry four ladder belts.

NOTE: One traffic vest for each seating position is not required if all firefighters are provided with and carry an issued traffic vest.

2. R 408.17421(6) requires that the fire apparatus maintain 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, when using the fire apparatus. The training of firefighters shall include development of the ability to recognize and identify primary, high-voltage transmission lines and series street lighting construction.

During a MIOSHA inspection, the IH/SO will evaluate the employer's compliance with the training component of the rule by conducting interviews of management and employees, along with a review of any applicable written procedures for the driving and operation of the fire apparatus, training materials, and training records. Fire apparatus drivers and operators and any firefighter who operates an aerial apparatus ladder

or platform or fire apparatus mounted light/communication tower would be considered an affected employee. The employer can satisfy the training requirement by one of the following:

- a) Provide training on Part 40, [Safety-Related Work Practices](#); or
- b) Provide training on electrical safety-related work practices by a qualified person who by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work, or the project (which in this case is working near unprotected energized equipment or high-voltage transmission lines). The trainer must have knowledge in electrical safety-related work practices. The training may be performed internally or by a vendor.

D. Aerial Apparatus.

R 408.17424(2) requires that while working in a fixed position from an aerial apparatus ladder, an employee be secured with a ladder belt system that meets or exceeds the requirements of [NFPA 1983](#), Standard on Life Safety Rope and Equipment for Emergency Services, 2001 edition, as adopted in R 408.17405.

During a MIOSHA inspection, the IH/SO will evaluate the employer's compliance with the rule by conducting interviews of management and employees to determine if a firefighter tethers themselves to the aerial apparatus ladder with an [NFPA 1983](#)-compliant ladder belt system (see section X. M. of this instruction) before performing work to include but not limited to operating the ladder tip or waterway monitor controls.

NOTE: This rule does not apply to firefighters working at the aerial apparatus turntable, in an aerial apparatus platform, or from a portable ground ladder. In addition, this rule does not apply to firefighters actively climbing or descending the ladder or entering or exiting the ladder.

E. Portable Ladders.

R 408.17426(1) requires that effective January 1, 2025, portable ground ladders used in structural firefighting or training for these operations must meet or exceed the requirements of both of the following:

- a) [NFPA 1931](#), Standard for Manufacturer's Design of Fire Department Ground Ladders, 1994 edition.
- b) [NFPA 1932](#), Standard on Use, Maintenance, and Service Testing of In-service Fire Department Ground Ladders, 2015 edition.

Effective January 1, 2025, the IH/SO will evaluate the employer's compliance with [NFPA 1931](#) by visually inspecting each portable ground ladder used in structural firefighting or training for a label affixed to the ladder that indicates the ladder meets all requirements of the standard certified by the ladder manufacturer.

Effective January 1, 2025, the IH/SO will evaluate the employer's compliance with [NFPA 1932](#) by requesting and reviewing the service test records for the portable ground ladders from the employer. The portable ground ladders must be service tested annually by the fire department or a qualified person. The employer must maintain the service test records for the life of the portable ground ladder. The IH/SO will conduct interviews with management and employees to determine if employees perform visual inspections of the portable ground ladders per paragraph 6.1 of [NFPA 1932](#) at least once every month and after each use. In addition, the IH/SO will visually inspect each portable ground ladder used in structural firefighting or training for heat sensors. For all portable ground ladders, except folding and multi-purpose portable ground ladders, the heat sensor labels must be located on the inside of each beam of each section immediately below the second rung from the tip of each section and in the center of that section.

NOTE: All portable ground ladders used in structural firefighting or training are covered under this rule, regardless of the year of manufacture. All portable ground ladders must also comply with the inspection requirements under R 408.17461(5).

F. Proper Use, Handling, Storage, and Containment of Firefighting Foam Concentrate.

R 408.17430(2) requires fire departments to contain and handle materials contaminated by foam containing PFAS as follows:

1. Prevent intentionally added PFAS-containing foam concentrate or foam solution from entering groundwater, surface water, or storm drains as soon as possible. Manual containment strategies used for spills involving a hazardous liquid should be employed. These include blocking storm drains to prevent the contaminated foam/water solution from entering the wastewater system or the environment. Defensive tactics such as damming, diking, and diverting should be employed to get the foam/water solution to an area suitable for containment until it can be removed in accordance with local, state, and federal regulations. Immediately after the end of a fire or other incident at which an organized fire department uses firefighting foam containing intentionally added PFAS, the fire chief shall report the incident to the Michigan Pollution Emergency Alert System.
2. Dispose of materials contaminated by foam containing PFAS pursuant to the [Natural Resources and Environmental Protection Act](#), 1994 PA 451, MCL 324.101 to 324.90106.

During a MIOSHA inspection, the IH/SO will first determine if the employer uses firefighting foam that contains PFAS. If the employer does not use firefighting foam containing PFAS, no further action needs to be taken. If the employer indicates firefighting foam containing PFAS is used, the IH/SO will need to determine when and where the last time the foam was used. The IH/SO will ask the fire chief if the incident was reported to the Michigan [PEAS](#) hotline. The IH/SO will need to determine what systems, devices, or control measures were in place to prevent the foam containing PFAS from entering the wastewater system or the environment. Interviews with management and employees should focus on

the knowledge and application of containment strategies for firefighting foam containing PFAS and whether these met the requirements of R 408.17430(2). If the IH/SO identifies deficiencies in the proper use, handling, storage, and containment of firefighting foam containing PFAS, a referral will be made to the Michigan Department of Environment, Great Lakes, and Energy by contacting the [PEAS](#) hotline.

G. Protective Ensemble for Structural Firefighting.

R 408.17432 requires that an employer provide a protective ensemble, to all employees who engage in or are exposed to structural firefighting. The protective ensemble must meet or exceed the requirements of [NFPA 1971](#), Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, 2007 edition, as adopted in R 408.17405. Effective January 1, 2025, the protective ensemble must meet or exceed the requirements of [NFPA 1971](#), Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, 2013 edition, as adopted in R 408.17405.

During a MIOSHA inspection, the IH/SO will evaluate the employer's compliance with their protective ensembles by conducting a visual inspection of each element of the protective ensemble employees use during structural firefighting operations and other emergency operations. For inspections conducted prior to January 1, 2025, the employer's protective ensembles must, at a minimum, comply with [NFPA 1971](#), 2007 edition. The IH/SO will review each element of the protective ensemble to ensure there is a product label(s) permanently and conspicuously attached. The worded portions of the label shall be in English. The compliance statements specified in Section 5.2 and Section 5.3 of [NFPA 1971](#), 2007 edition shall be printed legibly on the product label.

For inspections conducted on or after January 1, 2025, the employer's protective ensembles must, at a minimum, comply with [NFPA 1971](#), 2013 edition. The IH/SO will review each element of the protective ensemble to ensure there is a product label(s) permanently and conspicuously attached. The worded portions of the label shall be in English. The compliance statements specified in Section 5.2 and Section 5.3 of [NFPA 1971](#), 2013 edition shall be printed legibly on the product label.

NOTE: "Protective ensemble" means multiple elements of clothing and equipment designed to provide a degree of protection for firefighters from exposures to the inherent risks of structural firefighting operations and other emergency operations.

H. Eye and Face Protection for Emergency Operations.

R 408.17433 requires that while conducting emergency operations, when there is a potential exposure to eye and face hazards, the requirement in R 408.17431 for face and eye protection be met by one of the following:

- a) Helmet face shield, if equipped, and primary eye protection;

- b) Breathing apparatus face piece; or
- c) Primary eye protection and secondary means of face protection.

During a MIOSHA inspection, the IH/SO will evaluate the employer's compliance with eye and face protection requirements by conducting interviews of management and employees to determine the types of face and eye protection that firefighters use. The SO/IH will visually inspect the eye and face protection that employees use during emergency operations. Compliance with this rule can be achieved by using one of the following types of protection:

1. Helmet face shield that is worn over primary eye protection such as safety glasses or goggles. Flip-down-style eye shields would be acceptable if worn over primary eye protection. Retractable-style visors would be acceptable if properly adjusted for the user and worn under a helmet face shield;
2. Full facepiece of SCBA; or
3. Safety glasses or goggles and a secondary means of face protection which could include a face shield, structural firefighting protective hood, or a wildland fire fighting protective face and neck shroud.

I. Respiratory Protection.

R 408.17436 requires that any self-contained breathing apparatus currently in use meet or exceed the requirements of [NFPA 1981](#), Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services, 1997 edition, as adopted in R 408.17405. Effective January 1, 2025, any self-contained breathing apparatus currently in use must meet or exceed the requirements of [NFPA 1981](#), Standard on Open Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services, 2007 edition, as adopted in R 408.17405.

During a MIOSHA inspection, the IH/SO will evaluate the employer's compliance by visually inspecting the SCBAs employees use during emergency operations. For inspections conducted prior to January 1, 2025, the employer's SCBAs must, at a minimum, comply with [NFPA 1981](#), 1997 edition. The IH/SO will visually inspect the SCBAs to ensure a NIOSH certification label and a product label(s) are permanently and conspicuously attached. The worded portions of the label shall be in English. The label shall state the following: "THIS SCBA MEETS THE REQUIREMENTS OF NFPA 1981, STANDARD ON OPEN-CIRCUIT SELF-CONTAINED BREATHING APPARATUS FOR THE FIRE SERVICE, 1997 EDITION."

For inspections conducted on or after January 1, 2025, the employer's SCBAs must, at a minimum, comply with [NFPA 1981](#), 2007 edition. The IH/SO will visually inspect the SCBAs to ensure a NIOSH certification label and a product label(s) are permanently and conspicuously attached. The worded portions of the label shall be in English. The label shall state the following: "THIS SCBA MEETS THE REQUIREMENTS OF NFPA 1981, STANDARD ON OPEN-

CIRCUIT SELF-CONTAINED BREATHING APPARATUS (SCBA) FOR EMERGENCY SERVICES 2007 EDITION.”

J. Personal Alert Safety System (PASS).

R 408.17440 requires that an employer provide and enforce the use of a PASS device to each employee utilizing a self-contained breathing apparatus while engaged in structural firefighting operations. PASS devices shall meet or exceed the requirements of [NFPA 1982](#), Standard on Personal Alert Safety Systems (PASS), 1998 edition, as adopted in R 408.17405. Effective January 1, 2025, PASS devices must meet or exceed the requirements of [NFPA 1982](#), Standard on Personal Alert Safety Systems (PASS), 2007 edition, as adopted in R 408.17405.

During a MIOSHA inspection, the IH/SO will evaluate the employer’s compliance with the PASS device by visually inspecting the device employees use during structural firefighting operations. For inspections conducted prior to January 1, 2025, the employer’s PASS devices must, at a minimum, comply with [NFPA 1982](#), 1998 edition. The IH/SO will visually inspect the PASS devices to ensure a product label(s) is permanently and conspicuously attached. The worded portions of the label shall be in English. The label shall state the following: “THIS PASS MEETS THE REQUIREMENTS OF NFPA 1982, STANDARD ON PERSONAL ALERT SAFETY SYSTEMS (PASS), 1998 EDITION.”

For inspections conducted on or after January 1, 2025, the employer’s PASS devices must, at a minimum, comply with [NFPA 1982](#), 2007 edition. The IH/SO will visually inspect the PASS devices to ensure a product label(s) is permanently and conspicuously attached. The worded portions of the label shall be in English. The label shall state the following: “THIS PASS MEETS THE REQUIREMENTS OF NFPA 1982, STANDARD ON PERSONAL ALERT SAFETY SYSTEMS (PASS), 2007 EDITION.”

K. Air-Moving Equipment.

R 408.17443 requires that air-moving equipment exposed to hazardous levels of flammable gases, flammable vapors, or combustible dust be approved as intrinsically safe.

If the employer uses air-moving equipment that is not intrinsically safe and the air-moving equipment is not exposed to hazardous atmospheres, then the rule does not apply. If a non-intrinsically safe fan is positioned such that it only pushes clean air, the employer complies with this rule. However, if the non-intrinsically safe fan is positioned in an area where hazardous levels of flammable gases, vapors, or combustible dust can be pulled through the fan, the employer is not in compliance. The IH/SO shall investigate the quality of air being pulled through the fan and whether flammable gases, vapors, and combustible dust can migrate from their source to the air intake end of the fan intended for clean air.

NOTE: Levels of flammable gases or vapors would be considered “hazardous” if present at $\geq 10\%$ of their lower flammable limit (LFL). Firefighters primarily use positive pressure ventilation on structure fires; they place the fan a few feet outside of an entranceway and blow clean outside air into the building. Negative

pressure ventilation on structural fires, where the fan sucks air from the building and could be exposed to potentially flammable levels of gases and vapors is far less common.

L. Management of Emergency Operations.

1. R 408.17451(1) requires that each fire department establish and implement written procedures for emergency operations.

During a MIOSHA inspection, the IH/SO will evaluate the employer's compliance with this rule by determining if the fire department has established and implemented written procedures for each type of emergency operations it has or could engage in. This rule does not apply to emergency operations a fire department is not expected to perform. The IH/SO will need to review the emergency operations assessment as required under R 408.17451(1)(c) and corresponding written procedures and conduct interviews of management and employees.

NOTE: MIOSHA will accept a fire department's written standard operating guideline (SOG) such that it will be viewed as a written procedure for the purposes of compliance within Part 74, [Firefighting](#).

2. R 408.17451(1)(a) requires that each fire department establish and implement written procedures for a recognized incident management system providing structure and coordination to the management of emergency operations at each emergency.

During a MIOSHA inspection, the IH/SO will evaluate the employer's compliance with the rule by reviewing the fire department's written procedures for their incident management system. Fire departments may also refer to this system as the incident command system (ICS). The IH/SO will conduct interviews of management and employees to determine if a recognized incident management system is implemented at each emergency. Compliance with this rule can be achieved by implementing a recognized incident management system based upon one of the following:

- a) [NFPA 1561](#), Standard on Emergency Services Incident Management System and Command Safety;
- b) National Incident Management System (NIMS); or
- c) Any other recognized incident management system so long as it effectively provides structure and coordination to the management of emergency operations.

NOTE: The incident management system must define the roles and responsibilities to be assumed during emergency operations, including establishing an identified incident commander at the onset of each emergency. The incident management system must also provide for an orderly transfer of command, if necessary, and

the seamless transition of the command structure as emergency operations expand or contract to achieve tactical objectives.

3. R 408.17451(1)(b) requires that each fire department establish and implement written procedures for a personnel accountability system at each emergency.

During a MIOSHA inspection, the IH/SO will evaluate the employer's compliance with the rule by reviewing the fire department's written procedures for their personnel accountability system. The IH/SO will conduct interviews of management and employees to determine if a personnel accountability system was properly implemented at each emergency. Compliance with this rule can be achieved by implementing a personnel accountability system based upon one of the following:

- a) [NFPA 1500](#), Standard on Fire Department Occupational Safety, Health, and Wellness Program; or
- b) Any other effective personnel accountability system so long as it readily identifies both the location and function of personnel at each emergency.

NOTE: Personnel accountability systems may include the use of command boards, accountability stakes, firefighter tags, or electronic radio signaling devices (i.e., independent systems or systems integrated into SCBA and PASS).

4. R 408.17451(1)(c) requires the fire department establish a written assessment of the types of emergency operations it is expected to perform (e.g., fire suppression, trench rescue, rope rescue) and that the written procedures for emergency operations include the employees authorized to perform the identified operations.

During a MIOSHA inspection, the IH/SOs will evaluate the employer's compliance with this rule by determining if the fire department has a written assessment for the types of emergency operations they are expected to perform and a list of the employees authorized to perform each of the different identified operations. To determine if the fire department complies with this rule, the IH/SO will need to review the emergency operations assessment and conduct interviews with management and employees to determine the types of emergency operations the fire department has both performed or could perform and who is assigned to each.

Fire departments perform a broad range of emergency operations. Common emergency operations include but are not limited to fire suppression, emergency medical services, hazardous materials emergency response, and technical rescues such as rope, structural collapse, confined space, vehicle, animal, wilderness, trench, machinery, cave, mine and tunnel, helicopter, surface water, swift water, dive, ice, surf, watercraft, flood, and tower. The IH/SO should review the list with each interviewee.

NOTE: Fire departments may group employees by job titles (e.g., Firefighter, Captain) instead of listing employees individually, so long as all employees within that category are authorized to perform the identified operation.

5. R 408.17451(2) requires that a qualified employee function as the incident commander at each emergency.

During a MIOSHA inspection, the IH/SO will evaluate the employer's compliance with the rule by conducting interviews of management and employees to determine which employees serve in the capacity of an incident commander at emergencies. The IH/SO will review training records for the identified individuals. Compliance with this rule can be achieved by providing training to employees designated for the incident command role, by one of the following methods:

- a) [NFPA 1001](#), Standard for Fire Fighter Professional Qualifications (Fire Fighter II) or [MFFTC](#) Fire Fighter I & II;

NOTE: This level of training would be appropriate for initial operations only and not acceptable for sustained operations. Incident command must be transferred to an employee with a higher level of training as soon as possible.

- b) [NFPA 1561](#), Standard on Emergency Services Incident Management System and Command Safety;
- c) Both National Incident Management System (NIMS) [Incident Command System \(ICS\) 100](#), Introduction to the Incident Command System and [ICS 200](#), Basic Incident Command System for Initial Response.
- d) [MFFTC](#) Incident Command System and Resource Management for the Fire Service (ICS 100 & ICS 200); or
- e) Training on the incident management system by a qualified person who by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work, or the project. In this application the trainer must have knowledge in the fire department's incident management system. The training may be performed internally or by a vendor.

- M. General Utility Ropes, Life Safety Ropes, Harnesses, and Auxiliary Equipment.

R 408.17463(1) requires that life safety rope, harnesses, and auxiliary equipment dedicated for the purpose of supporting people during emergency operations or training for these operations must be used and meet or exceed the requirements of NFPA 1983, Standard on Life Safety Rope and Equipment for Emergency Services, 2001 edition, as adopted in R 408.17405.

During a MIOSHA inspection, the IH/SO will evaluate the employer's compliance with [NFPA 1983](#), by conducting a visual inspection of their life safety ropes, harnesses, and auxiliary equipment that employees use during emergency operations or training. The IH/SO will review the life safety ropes, harnesses, and auxiliary equipment to ensure there is a product label(s) permanently and conspicuously attached to, embossed on, or printed on each item, other than as permitted by 3.1.1.1.2 and 3.1.1.1.3 in [NFPA 1983](#). The compliance and information statements specified in 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.6, and 3.1.7 in [NFPA 1983](#) shall be legibly printed on the product label(s).

N. Training and Education Program.

1. R 408.17464(1)(d) requires each fire department to 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.

During a MIOSHA inspection, the IH/SO will evaluate the employer's compliance with this rule by determining if employees have been effectively trained before performing emergency operations. This rule does not apply to an employee who is not expected to perform emergency operations. To determine if the fire department complies with this rule, the IH/SO will need to review the emergency operations assessment as required under R 408.17451(1)(c) and corresponding training records. The IH/SO will conduct interviews of management and employees to ascertain employee duties, functions, and training and whether employees have performed those duties or functions yet.

NOTE: An employee who is currently enrolled in a Fire Fighter I or Fire Fighter I and II training program, often referred to as a "firefighter trainee" or "probationary firefighter," may participate in emergency operations so long as they only perform duties and functions for which they have received documented training. The documented training must include both a knowledge and skill assessment.

Firefighters perform a broad range of duties and functions during emergency operations. Training requirements that could apply to a firefighter include but are not limited to the list in [Appendix B](#).

NOTE: The training requirements for firefighters listed in [Appendix B](#) are not the only training requirements that a fire department must comply with. There are other MIOSHA standards that contain training provisions that apply to firefighting-related activities. For example, Part 451, [Respiratory Protection](#) has training requirements for those who are required to use respirators. Aside from Part 74, [Firefighting](#), MIOSHA standards with training requirements that could apply to a fire department include but are not limited to the list in [Appendix A](#).

2. R 408.17464(1)(f) requires each fire department to assure that firefighters receive and maintain certification in first aid, cardiopulmonary resuscitation, and automated external defibrillator.

During a MIOSHA inspection, the IH/SO will review training records to determine if all firefighters have current certification in first aid, cardiopulmonary resuscitation, and automated external defibrillator.

NOTE: A firefighter has twelve months from their date of hire to receive their initial certification. Courses taken exclusively online will not be accepted. [Vendors](#) approved by the MDHHS will be accepted. First aid, cardiopulmonary resuscitation, and automated external defibrillator certification must be renewed every two years. A current State of Michigan emergency medical services license (renewed every three years) will be accepted as being compliant with the first aid component.

3. R 408.17464(2) requires that all live fire training meet or exceed the requirements of the [NFPA 1403](#), Standard on Live Fire Training Evolutions, 2018 edition, as adopted in R 408.17405.

During a MIOSHA inspection, the IH/SO will evaluate the employer's compliance with this rule by first determining if firefighters have participated in live fire training evolutions within the last six months. If live fire training evolutions have occurred, the IH/SO will determine in what capacity the fire department and firefighters participated in the live fire training evolution and what type of structure or prop was utilized. Types of structures and props include acquired structures, gas-fired live fire training structures, non-gas-fired live fire training structures, mobile enclosed live fire training props, and exterior live fire training props.

MIOSHA inspections of live fire training evolutions involving multiple fire departments will be conducted in accordance with Agency Instruction, [MIOSHA-COM-04-1 Multi-Employer Work Sites](#), as amended. The instruction outlines the responsibilities for the different types of employers: creating, exposing, correcting, or controlling employer.

In general, the host fire department, with jurisdiction over the address where the live fire training evolution occurred, will be responsible for maintaining all required live fire training evolution reports and records under [NFPA 1403](#). Examples of live fire training evolution reports and records include account of activities conducted, list of instructors and assignments, list of other participants, documentation of unusual conditions, documentation of injuries incurred, and treatment rendered, documentation of changes or deterioration of live fire training structure, and documentation of a post-training critique session.

To determine if a fire department is in compliance with [NFPA 1403](#), the IH/SO will need to review live fire training evolution reports and records, conduct interviews with management and employees, review training

records, and review products labels of any protective ensembles, SCBA, and PASS devices used during the live fire training evolution(s).

The IH/SO will conduct interviews of management and employees to determine if each of the following was established pre-burn:

- a) A method of fireground communication;
- b) A building evacuation plan and evacuation signals demonstrated to all participants of the interior live fire training evolutions;
- c) Basic life support (BLS) emergency medical services were available on site;

NOTE: For acquired structures, on-site BLS emergency medical services must have transport capabilities.

- d) A briefing session was conducted for all participants by the instructor in charge with the safety officer (ICS); and
- e) A walk-through of the acquired structure, burn building, or prop was conducted by all participants.

The IH/SO will review training records to determine if each of the following was met:

- a) Participants meet the minimum prerequisites in accordance with Paragraph 4.3 "Student Prerequisites" of [NFPA 1403](#);

NOTE: MIOSHA will accept participants who meet the requirements for Fire Fighter I as being compliant with Paragraph 4.3 "Student Prerequisites" of [NFPA 1403](#).

- b) Instructors meet the minimum requirements for Fire Instructor I in accordance with [NFPA 1041](#), Standard for Fire Service Instructor Professional Qualifications, 2012 edition; and

NOTE: Fire Instructor I requires the knowledge and skills to deliver instruction effectively. Compliance with this requirement may be achieved by possessing a recognized certificate or through documented training and experience demonstrating competency in the requisite knowledge and skills per [NFPA 1041](#).

- c) The instructor-in-charge meets the minimum requirements for Fire Instructor II in accordance with [NFPA 1041](#).

NOTE: Fire Instructor II requires the knowledge and skills to develop, schedule, and supervise instruction effectively. Compliance with this requirement may be achieved by possessing a recognized certificate or through documented training and experience demonstrating competency in the requisite knowledge and skills per [NFPA 1041](#).

The IH/SO will review products labels to determine all the following were met:

- a) Protective ensembles meet the requirements of [NFPA 1971](#), 2013 edition;

NOTE: The IH/SO will visually inspect the protective ensemble in accordance with section X. G. of this instruction.

- b) SCBA meet the requirements of [NFPA 1981](#), Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services, 2013 edition; and

NOTE: The IH/SO will visually inspect the SCBAs to ensure there is a NIOSH certification label and a product label(s) permanently and conspicuously attached. The worded portions of the label shall be in English. The label shall state the following: “THIS SCBA MEETS THE REQUIREMENTS OF NFPA 1981, STANDARD ON OPEN-CIRCUIT SELF-CONTAINED BREATHING APPARATUS (SCBA) FOR EMERGENCY SERVICES, 2013 EDITION. DO NOT REMOVE THIS LABEL.”

- c) PASS devices meet the requirements of [NFPA 1982](#), Standard on Personal Alert Safety Systems (PASS), 2013 edition.

NOTE: The IH/SO will visually inspect the PASS devices to ensure there is a product label(s) permanently and conspicuously attached. The worded portions of the label shall be in English. The label shall state the following: “THIS PASS MEETS THE REQUIREMENTS OF NFPA 1982, STANDARD ON PERSONAL ALERT SAFETY SYSTEMS (PASS), 2013 EDITION. DO NOT REMOVE THIS LABEL.”

NOTE: Wildland live-fire training evolutions are not covered under this rule.

APPENDIX A
MIOSHA STANDARDS TYPICALLY APPLICABLE TO FIREFIGHTING

Part Number	Standard Title
Act 154	Michigan Occupational Safety and Health, Act 154 of 1974
ADM 11	Recording and Reporting of Occupational Injuries and Illnesses
GI 1	General Provisions
GI 1A	Abrasive Wheels
GI 2	Walking-Working Surfaces
GI 6	Fire Exits
GI 7	Guards for Power Transmission
GI 8	Portable Fire Extinguishers
GI 9	Fixed Fire Equipment
GI 12	Welding and Cutting
GI 33/433	Personal Protective Equipment
GI 38	Hand and Portable Powered Tools
GI 39	Design Safety Standards for Electrical Systems
GI 40	Safety-Related Work Practices
GI 49	Slings
GI 53	Tree Trimming and Removal
GI 54	Powered Groundskeeping Equipment
GI 56	Storage and Handling of Liquefied Petroleum Gases
GI 59	Helicopters
GI 69	Compressed Gases: Acetylene, Hydrogen, Oxygen, and Nitrous Oxide
GI 72	Automotive Service Operations
GI 74	Firefighting
GI 75	Flammable Liquids
GI 85	The Control of Hazardous Energy Sources (Lockout/Tagout)
GI 90/490	Permit-Required Confined Spaces
GI 92/430	Hazard Communication
GI 93	Air Receivers
GI 301	Air Contaminants for General Industry
GI 305	Asbestos for General Industry
GI 380	Occupational Noise Exposure in General Industry
GI 432	Hazardous Waste Operations and Emergency Response
GI 451	Respiratory Protection
GI 470	Employee Medical Records and Trade Secrets
GI 472	Medical Services and First Aid
GI 474	Sanitation
GI 504	Diving Operations
GI 520	Ventilation Control
GI 554	Bloodborne Infectious Diseases
GI 590	Silica in General Industry

**APPENDIX B
 TRAINING REQUIREMENTS APPLICABLE TO FIREFIGHTERS**

Emergency Operation	Duties/Functions	Training Requirement(s)
Fire Suppression	Fire Fighter I ¹	NFPA 1001 OR MFFTC Fire Fighter I
	Fire Fighter II	NFPA 1001 OR MFFTC Fire Fighter I & II
	Fire Apparatus Driver ²	Requirements per the Michigan Vehicle Code (Act 300 of 1949) Section 257.312e(11)
	Fire Apparatus Operator ²	NFPA 1002 OR BOTH MFFTC Pump Apparatus Operator AND Fire Apparatus Specific Training
Emergency Medical Services	Medical First Responder	Requirements per the MDHHS, Bureau of EMS, Trauma and Preparedness
	Emergency Medical Technician	
	Advanced Emergency Medical Technician	
	Paramedic	
Hazardous Materials Emergency Response	Awareness	NFPA 1072 OR Equivalent MFFTC Training OR Equivalent MSP Training
	Operations	
	Technician	
	Specialist	
Technical Rescues ³	Awareness	NFPA 1006 OR Equivalent MFFTC Training OR Equivalent MSP Training
	Operations	
	Technician	
Officer		Fire Fighter I & II AND Hazardous Materials Emergency Response Operations AND Qualified Incident Commander

¹ Fire Fighter I does not include basic training in vehicle extrication, foam operations, or incident command.

² An employee's driver/operator qualification may vary based on fire apparatus type. Fire apparatus types include pumper, initial attack, mobile water supply, aerial, quint, special service, and mobile foam.

³ An employee's technical rescue qualification level may vary based on discipline. Technical rescue disciplines include rope, structural collapse, confined space, vehicle, animal, wilderness, trench, machinery, cave, mine and tunnel, helicopter, surface water, swiftwater, dive, ice, surf, watercraft, flood, and tower.