

Michigan Municipal Workers' Compensation Fund

Safety and Health Resource Manual



Reducing Exposures From Confined Space Entry

Over 1.6 million Americans work in Confined Spaces each year, and each year many accidents occur. Many of these accidents lead to serious injury or death from asphyxiation, engulfment, electrical shock, falls, or heat stress. The Occupational Safety and Health Administration (OSHA) believes that employers can prevent 85% of these accidents and has mandated a Confined Space Entry Program. The goal is to educate employees on proper Confined Space Entry procedures, thereby preventing accidents or, if accidents do occur, reducing the severity of any injuries.

This document is intended to provide you with some basic requirements of a confined space entry program. You can use it to implement a new program or to review the effectiveness of your current program. We encourage you to review Michigan Occupational Safety and Health Administration (MIOSHA), Part 90. Confined Space Entry for more information.

Key Terms

A space is confined if it meets three conditions:

- The space is large enough and configured so that an employee can enter the space and perform work;
- It has limited or restricted means for entry or exit; and
- It is not designed for continuous employee occupancy.

Permit-required means that conditions in a confined space are sufficiently hazardous to require special precautions and documented procedures.

A confined space is Permit-required if it meets one or more of the following conditions:

- Its atmosphere is or has the potential to be hazardous;
- It contains a material that has the potential for engulfing an entrant;
- Its internal configuration is such that an employee could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or
- It contains any other recognized serious safety and health hazard.

Hazardous Atmosphere:

An atmosphere that may expose an employee to the risk of death, incapacitation, impairment of ability to self-rescue, serious injury or acute illness due to various atmospheric conditions. Employers should monitor for specific limits to determine if a hazardous condition exists.

Configuration:

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Configuration refers to the shape or construction of the confined space. A confined space that can wedge or pin an employee and cause suffocation, physical harm, incapacitation or death should be designated as permit-required.

Engulfment:

The surrounding or immersion of a person by a flowing liquid or solid that causes death. Death results from the filling and plugging of the respiratory system or by strangulation, constriction or crushing as result of the force that the liquid or solid exerts.

Other types of safety and health hazards: There are many types of special hazards. The most frequent are the control of hazardous energy sources, machines guarding, noise, and falls.

Your Responsibilities

You are responsible for evaluating the workplace to determine if any spaces are Permit-required and to inform employees of the existence and danger posed by the Permit-required spaces. You should post a danger sign or implement other effective means of warning employees



**DANGER
PERMIT-REQUIRED
CONFINED SPACE
DO NOT ENTER**

If, at any time, you decide that your employees will enter Permit-required confined spaces, you should:

- Develop and implement a written Permit-required confined space entry program. Employees and their representatives should be able to inspect the program. The program should include:
 - Measures for preventing unauthorized space entry;
 - Methods of identifying and evaluating hazards;
 - Procedures for safe entry;
 - Procedures for identifying and using equipment,
 - The evaluation of Permit-required conditions;
 - The designation of attendants, authorized entrants, entry supervisors, and employees who may test and monitor conditions.

OSHA and MIOSHA have specified other requirements for a program. You should review MIOSHA PART 90.

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You should also:

- Identify all Permit-required spaces in the workplace. You should inform employees in a reasonable fashion of the existence and danger of such spaces. Many public agencies create a list of Permit-required confined spaces.
- Reduce the risk of injury by posting warning signs or by other equally effective measures. When practicable, you should label all confined spaces adequately.
- Develop a permit system for use before entry into every Permit-required space. Make certain that employees comply with your permit system. The permit should document the pre-entry precautions and have an entry supervisor's approval. The permit should comply with MIOSHA Part 90.
- Maintain all permits for at least one (1) year.
- Train employees who work in Permit-required confined spaces. Training should include the identification of Permit-required confined spaces, department policies and procedures, entry procedures, duties of personnel (attendants, entrants, supervisors and rescue teams), permit entry procedures, and the use of personal protective equipment.
- Require attendance at a refresher course especially when conditions change. It is an excellent idea to practice entry into a typical Permit-required space. You should follow ALL procedures during the training; never take a shortcut. Employees who do not work in a Permit-required space should be advised of the dangers of doing so.
- Document all Permit-required confined space entry training. Documentation should include: employee name, signature of trainer, and date of training. A qualified instructor should perform the training.
- Purchase adequate entry equipment. This includes, but is not limited to, testing and monitoring equipment, ventilation equipment, communication equipment, personal protective equipment, lighting equipment, barriers and shields, appropriate ladders, rescue equipment, and any other equipment necessary to provide a safe entry into the space.
- Maintain your equipment in accordance with manufacturers' recommendations. Document all maintenance and repairs in department files. Train employees on the use, maintenance and testing of all equipment.
- Pre-arrange for adequate rescue services when needed. You can train your own employees or arrange for an outside service. If you train your employees, training should meet the requirements of MIOSHA Part 90. If you arrange for an outside rescue team, you should make sure that the service is aware of the hazards it might face, is provided with access to the spaces, has taken adequate planning measures, and has received proper training. You should have a written agreement with the outside service. While not specifically required, MIOSHA recommends that a rescue team should be able to arrive at the rescue site within 4-6 minutes. **Don't** assume your local Fire Department will provide rescue as many do not.
- Review confined spaces periodically for changing conditions that might alter a confined space's status. If the status changes, you should inform employees of the change and provide additional training if necessary.
- Make certain that contractors who enter confined spaces are aware of the confined space program and the hazards they might face. There are no exceptions to this rule. Before awarding a contract or allowing a contractor to enter a confined space, they should understand and agree to comply with the requirements. Always document this communication by having contractors provide a written acknowledgment. We also recommend that you require contractors to provide your agency with proof of worker's compensation insurance

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and liability insurance naming your municipality as an additional insured. MIOSHA may hold you responsible if contractors do not follow proper procedures.

- Require a "Hot Work Permit" when employees conduct operations such as riveting, welding, cutting, burning and heating in a Permit-required confined space.

You can use alternative procedures for entering permit-required spaces if you can demonstrate that:

- A) the only hazard the space poses is an actual or potential hazardous atmosphere;
- B) continuous forced air ventilation alone is sufficient to maintain safe entry into the space;
- C) monitoring and inspection of the space documents and supports points A & B above;
- D) people entering the space will do so in compliance with the written program; and
- E) you document determinations and supporting data and made them available to each employee who enters the space. Entry into the space can take place when you have proven that:
 1. it is safe to remove the cover,
 2. you have taken precautions against falling and overhead,
 3. you have tested the atmosphere and found it to be without hazard at any time the employee is in the space,
 4. you have provided forced air ventilation to eliminate any hazards, and
 5. the employee can and will exit immediately if conditions change.

Procedures That You Should Follow if Your Employees Do Not Enter Permit-required Confined Spaces:

- Identify Permit-required confined spaces in the workplace;
- Inform employees of the presence of Permit-required spaces;
- Re-evaluate spaces when conditions change; and
- Inform contractors that the workplace contains Permit-required confined spaces.

Conclusion:

We cannot emphasize enough the importance of following proper procedures in confined spaces. You should review your operations to determine if the workplace contains confined spaces that employees or contractors may have to work in or near. Once you have completed the review, you should develop a policy, train employees, develop procedures and assure that employees comply with them.

We encourage you to review MIOSHA part 90 and to seek professional assistance in this area.

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Confined Space Entry Self-Assessment

Each year many employees who work in or near confined spaces are injured. Fortunately, injuries to Pool and Fund members are not frequent. When such injuries occur, however, their severity can be devastating to the employer, the employee, and to the employee's coworkers and family.

You should take all reasonable precautions to eliminate or reduce exposures to injury. To determine if your confined space practices are adequate, review the following questions.

Does your organization:

1. Have a written Confined Space Entry policy?

Yes No →



Your policy should:

- Identify measures for preventing unauthorized entry;
- Discuss methods of identifying and evaluating hazards;
- Provide procedures for safe entry;
- Instruct employees on the safe use of equipment;
- Include a procedure for evaluating Permit-required conditions; and
- Assign key responsibilities to employees involved in an entry.

2. Train employees on confined space entry?

Yes No →



Training should include:

- The identification of Permit-required spaces;
- Department policies and procedures;
- Permit-required entry procedures;
- Principle player roles and responsibilities;
- Permit procedures;
- The use of personal protective equipment; and
- Refresher courses when conditions change.

Document employee attendance and program content.

3. Have and enforce the use of a permit system?

Yes No →



A Permit System should:

- Be complied with by all employees;
- Document pre-entry precautions;
- Be approved by the entry supervisor;
- Comply with MIOSHA Part 90; and
- Be documented. **Part 90 requires you to maintain records for one year.**

4. Have a rescue team available and ready?

Yes No →



The rescue team should:

- Be pre-arranged for adequate service whether internal or external;
- Meet requirements in MIOSHA Part 90;
- Be aware and ready to meet the hazards they may face;
- Take adequate planning and training measures; and
- Must be able to arrive in a reasonable time. MIOSHA recommends 4 to 6 minutes.

5. Have adequate equipment?

Equipment should include:

- Testing, monitoring and communication equipment;
- Ventilation equipment;
- Personal protective equipment;
- Lighting, barriers, shields, and ladders;
- Rescue equipment; and
- Any other equipment needed to provide a safe entry.

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Yes No _____ →



6. Have procedures for other areas of concern?

Yes No _____ →



Procedures should state that:

- Contractors should follow your procedures.
- Employees must obtain a "hot work" permit to rivet, weld, cut or burn near or in a confined space.
- All equipment must be maintained adequately and that maintenance must be documented.

Note: Follow procedures even if your employees do not enter a confined space.

Conclusions



If you were able honestly to answer "yes" to all six questions and your organization follows most or all of the suggested practices, then your organization has reduced its exposure to future claims. You should congratulate yourself.



If you were unable to answer "yes" to one or more of the six critical questions, your organization may have a greater exposure to claims arising from confined space entry. Missing components of one or more of the recommended practices may also indicate a deficiency in your current program. You should take one or more of the following actions:

- Correct any deficiency that may exist;
- Contact the Michigan Department of Labor, SET Division at 517/322-1809;
- Contact MML Risk Management Services at 800/653-2483; or
- Contact the League's Loss Control Services at 800/482-0626.



IMPORTANT TELEPHONE NUMBERS

MML Risk Management Services	734/662-3246 800/653-2483
Loss Control Services	800/482-0626
Michigan Dept. of Labor, SET Division	517/322-1809

NOTE:

This document is not intended to be legal advice or implied to identify all confined space-related exposures. Public agencies are encouraged to contact their safety specialist for assistance in implementing these or other changes.