CONFINED SPACES

INTRODUCTION

It is estimated that over 2.1 million American workers enter confined spaces each year. When accidents occur in these spaces, they often lead to serious injury or death. Employers and employees must be educated on – and follow – proper Confined Space Entry procedures to prevent accidents or reduce the severity of injuries.

This document provides basic requirements for a Confined Space Entry Program. It can be used to implement a new program or to review the effectiveness of an existing program.

We encourage review of Michigan Occupational Safety and Health Administration (MIOSHA) Part 90 *Confined Space Entry* and MIOSHA Part 490 *Permit Required Confined Spaces* for more information.

KEY TERMS

Confined Space: A space that meets all three of the following conditions:

- it is large enough and configured such 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 Confined Space: A space in which conditions are sufficiently hazardous to require special precautions and documented procedures. Such a space meets one or more of the following conditions:

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

Note: For Permit-Required Confined Spaces, the employer creates its own entry "permit" as part of its Permit-Required Confined Space Program (detailed below). The permit serves as an internal safety authorization.

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.

Configuration: The shape or construction of a confined space.

Engulfment: The surrounding and capture of a person by a liquid or solid that can flow. Engulfment can cause death by filling and plugging the respiratory system or by exerting enough force on the body to cause death by strangulation, constriction or crushing.

Other hazards: Additional safety and health hazards that could be encountered while in a confined space. The most frequent are the control of hazardous energy sources, machine guarding, noise, and falls.

FUNDAMENTAL EMPLOYER RESPONSIBILITIES

Employers must:

- evaluate their workplace to determine whether any spaces are Confined Spaces or Permit-Required Confined Spaces, including monitoring atmospheres compared to specific limits to determine whether a hazardous atmosphere exists;
- post signage or other effective means of labeling and warning employees about every Confined Space and Permit-Required Confined Space in their workplace;
- inform all employees, even employees who don't enter Confined Spaces, about the existence of and danger posed by Permit-Required Spaces (consider making a written list of such spaces available to all employees);
- inform contractors when the workplace contains Permit-Required Confined Spaces (details below);
- re-evaluate spaces periodically for changing conditions that might alter a space's status (if the status changes, employees must be informed of the change and provided with additional training as necessary);
- determine whether any employees will enter Permit-Required Confined Spaces;
- if employees will enter Permit-Required Confined Spaces, develop and implement a written Permit-Required Confined Space Program (detailed below);
- ensure that employees comply with any established Confined Space Permit system;
- maintain all permits for at least one (1) year to facilitate MIOSHA review of the Permit-Required Confined Space Program.

PERMIT-REQUIRED CONFINED SPACE PROGRAMS

- The Permit-Required Confined Space Program should be written and available for inspection by employees and their representatives.
- The program should include at minimum:
    - measures for preventing unauthorized space entry;
    - methods of identifying and evaluating hazards;

- procedures for safe entry including the use of an internal Permit Form which must be completed and approved by designated, authorized personnel prior to each 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;
- other requirements as specified by OSHA and MIOSHA – review MIOSHA Part 90 for details. (A sample policy is available through the League's Loss Control Services.)

TRAINING FOR EMPLOYEES WHO WORK IN PERMIT-REQUIRED CONFINED SPACES

- Train all employees who work in Permit-Required Confined Spaces.
- A qualified instructor should perform all trainings. (This may be an experienced employee/ supervisor, although many municipalities contract with an outside agency.)
- Permit-Required Confined Space training should include:
  - identification of Permit-Required Confined Spaces;
  - the employer's policies and procedures;
  - entry procedures;
  - duties of personnel (attendants, entrants, supervisors, and rescue teams);
  - permit entry procedures; and
  - the use, maintenance, and testing of all entry equipment (detailed below).
- It is an excellent idea to practice entry into a typical Permit-Required space. Follow ALL procedures during the training; never take a shortcut.
- Training should include informing our employees that, according to National Safety Council statistics, more **rescuers** are killed in confined space events than the employees initially involved. Workers' instincts will be to attempt to assist their workmate. However, unless someone is trained and equipped for rescue, they likely will only add to the toll.
- Require attendance at refresher trainings, especially when conditions change.
- Document all Permit-Required Confined Space entry training, including employee names, name and signature of trainer, and the date of training.

EQUIPMENT

- Purchase adequate entry equipment including, but 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 equipment in accordance with manufacturers' recommendations.

- Document all maintenance and repairs in department files, including calibration dates and the names of those who performed the calibrations.

RESCUE SERVICES

Pre-arrange for adequate rescue services when needed.

- Employers can train their own employees or arrange for an outside rescue service.

- Training for employees should meet the requirements of MIOSHA Part 90.

- If using an outside rescue team, obtain a written agreement for that service. Additionally, ensure 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.

- MIOSHA requires that an employer evaluate a prospective rescuer service's ability to respond to a rescue summons in a timely manner considering the hazard(s) identified.

- Fire Departments frequently serve as confined space rescue teams. Local corporations with rescue teams may provide rescue services to their community.

CONTRACTORS

- Organizations must inform contractors when their workplace contains Permit-Required Confined Spaces. Make no exceptions to this rule.

- Organizations must make certain that contractors who enter Permit-Required Confined Spaces are aware of the organization's confined space program and hazards the contractors might face.

- Before awarding a contract or allowing a contractor to enter a confined space, ensure that they understand and agree to comply with the requirements of the Permit-Required Confined Space Program. Document this communication by having contractors sign a written acknowledgment.

- Require contractors to provide proof of workers' compensation insurance and liability insurance, naming the contracting organization as an additional insured.

- MIOSHA may hold the contracting organization responsible if contractors do not follow proper procedures.

HOT WORK PERMITS

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

ALTERNATIVE PROCEDURES FOR PERMIT-REQUIRED CONFINED SPACES

Alternative procedures may be used for entering Permit-Required Confined spaces if the employer has determined and can demonstrate with documented supporting data that:

1) the only hazard the space poses is an actual or potential hazardous atmosphere;

2) continuous forced air ventilation alone is sufficient to maintain safe entry into the space;

3) monitoring and inspection of the space supports and documents points 1) and 2) above;

4) it is proven that it is safe to remove the cover;

5) falling and overhead precautions have been taken;

6) the atmosphere has been tested and is without hazard at the time an employee is in the space;

7) continuous forced air ventilation is being provided at the time an employee is in the space;

8) determinations and supporting data are made available to each employee who enters the space;

9) employee entry takes place in compliance with the written program; and

10) the employee can and shall exit immediately if conditions change.

CONCLUSION

We cannot emphasize enough the importance of following proper procedures in confined spaces. Employers should review their operations to determine whether their workplace contains confined spaces which employees or contractors may have to work in or near, develop and implement a Permit Required Confined Space Program, train employees, and ensure that employees comply with all policies and procedures.

We encourage employers to review MIOSHA Part 90 and to seek professional assistance in this area.

Contact MML Risk Management Services Staff
or your Loss Control Consultant for more information.

Important Phone Numbers

MML Risk Management Services	800.653.2483
Loss Control Services	800.752.7477
Department of Labor, CET Division	517.284.7720

Note:
This document is not intended to be legal advice.
It only identifies some of the issues surrounding this topic.
Public agencies are encouraged to review their procedures with an expert or a competent attorney who is knowledgeable about the subject.

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RISK MANAGEMENT SELF-ASSESSMENT

CONFINED SPACES

Organization name	Evaluation period
Completed by (name and title)	**Date completed**

Evaluate your operations against best practices by asking the questions below. A response of "No" to any question indicates an area that may require further evaluation and a plan for improvement or correction.

Yes	No	n/a	
		1.	**Does your organization have a written Confined Space Entry policy that:**
			specifies what conditions qualify a space as being a Confined Space or a Permit-Required Confined Space?
			requires evaluation of the workplace to determine whether any spaces are Confined Spaces or Permit-Required Confined Spaces?
			requires periodic re-evaluation for changing conditions that might alter a space's status?
			requires signage or other effective means of labeling to warn employees about any Confined Spaces and Permit-Required Confined Spaces in the workplace?
		2.	**Does your organization have signage posted for every Confined Space and Permit-Required Confined Space in your workplace?**
		3.	**Does your organization have a program for Permit-Required Confined Space Entry that:**
			is written and available to employees and their representatives?
			complies with MIOSHA Part 90?
			provides methods for identifying and evaluating hazards?
			identifies measures for preventing unauthorized entry?
			provides procedures for safe entry?
			defines roles and responsibilities for employees involved in entry?
			requires documentation of pre-entry precautions taken?
			requires approval by the entry supervisor prior to entry?
			requires compliance by all employees?
			requires maintenance of all permits for at least one year?
			identifies monitoring, entry, and safety equipment shall be available?
			requires equipment to be maintained, with documentation of its maintenance?
			requires training for all employees who work in Permit-Required Confined Spaces?
			requires refresher trainings when conditions change?
		4.	**Does your organization train all employees who work in Permit-Required Confined Spaces?**
		5.	**Does your organization document all such employee trainings?**
		6.	**Does your organization require all such trainings to be performed by a qualified instructor?**

Yes	No	n/a	
		7.	**Do employee trainings include:**
			identification of Permit-Required spaces?
			methods for identifying and evaluating hazards?
			your organization's Permit-Required Confined Space entry policies and procedures?
			employee roles and responsibilities?
			instruction on the use of personal protective equipment?
			instruction on the use, maintenance, and testing of entry, monitoring, and other equipment?
		8.	**Does your organization have a pre-arranged internal or external rescue team/service available?**
		9.	**Does the rescue team/service:**
			comply with requirements of MIOSHA Part 90?
			have awareness regarding the hazards they may face in your organization's workplace?
			have plans in place for the hazards possible in your workplace?
			have adequate training to meet the hazards possible in your workplace?
			have the ability to arrive in a reasonable time (MIOSHA recommends 4-6 minutes)?
		10.	**Does your organization have appropriate equipment including:**
			testing and monitoring (triple function) equipment?
			ventilation equipment?
			communication equipment?
			personal protective equipment?
			lighting equipment?
			barriers and shields?
			appropriate ladders?
			rescue equipment?
		11.	**Does your organization maintain its equipment adequately?**
		12.	**Does your organization document all equipment maintenance?**
		13.	**Does your organization inform contractors of all Permit-Required Confined Spaces in the workplace?**
		14.	**Does your organization inform contractors of its Permit-Required Confined Space Entry procedures and require contractors to agree, in writing, to follow those procedures?**
		15.	**Does your organization require a "Hot Work Permit" when employees conduct operations such as riveting, welding, cutting, burning and heating in a Permit-Required Confined Space?**

CONCLUSIONS



If you can honestly answer "yes" to all applicable questions, your risk management program for Confined Spaces is on solid footing – congratulations! Following the recommended practices reduces your organization's exposure to future claims in this area. Remain vigilant for new or changing risks and address them promptly.



If you answered "no" to one or more questions, your organization faces increased exposure to disability discrimination claims and the associated direct and indirect costs. Each "no" response indicates a possible deficiency in your risk management program. You should consider these carefully and take one or more of the actions below:

- Correct any deficiency that may exist;
- Contact MML Risk Management Services at the number below;
- Contact MML Loss Control Services at the number below;
- Contact the Michigan Department of Labor & Economic Opportunity.

Contact MML Risk Management Services Staff
or your Loss Control Consultant for more information.



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