

This sample policy/procedure must be customized to fit the needs of your company. It must be integrated into other policies/procedures and processes as required. This is not meant to be used "as-is", but must be adapted to reflect your company needs and processes.

[insert company info here]

CONFINED SPACE PROCEDURE

Date of Issue:	
Written by:	Date:
Reviewed by:	Date:
Approved by:	Date:

PURPOSE

The purpose of this program is to ensure the protection of all employees from the hazards associated with confined space entry. This document contains requirements for practices and procedures to protect employees from those hazards of entry into and work within permit required confined spaces.

SCOPE

This procedure applies to all employees, visitors and contractors on site. Specific confined space permits will be created.

RELATED DOCUMENTATION

Internal

Confined Space Assessment
Confined Space Permit
Rescue Plan

External

Ontario Regulation 632/05 Confined Spaces

DEFINITIONS

Confined Space	<p>"confined space" means a fully or partially enclosed space,</p> <p>(a) that is not both designed and constructed for continuous human occupancy, and</p> <p>(b) in which atmospheric hazards may occur because of its construction, location or contents or because of work that is done in it.</p>
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	If you have a space that is fully or partially enclosed, the two conditions – (a) and (b) above – must both apply before the space can be considered a "confined space"
Potential Confined Space	A location within the project that has limited access or egress; is not designed for continuous human occupancy; and has the potential for having a hazardous atmosphere
Actual Confined Space	A potential confined space that has been tested and confirmed that a hazardous atmosphere exists; or that the nature of the work within the confined space will create a hazardous atmosphere
Atmospheric Hazards	<p>Accumulation of flammable, combustible or explosive agents</p> <p>An oxygen content in atmosphere that is less than 19.5% or more than 23% by volume</p> <p>The accumulation of atmospheric contaminants, including gases, vapours, fumes, dusts or mists, that could</p> <ul style="list-style-type: none"> Result in acute health effects that pose an immediate threat to life, or Interfere with a person's ability to escape unaided from a confined space
Adequate	<p>When used in relation to a procedure, plan, material, device, object or thing means</p> <ul style="list-style-type: none"> Sufficient for both its intended and its actual use, and Sufficient to protect a worker from an occupational illness or injury
Acceptable Atmospheric Levels	<p>The atmospheric concentration of any explosive or flammable gas or vapour is less than,</p> <ul style="list-style-type: none"> 25 per cent of its lower explosive limit, 10 per cent of its lower explosive limit 5 per cent of its lower explosive limit, <p>The oxygen content of the atmosphere is at least 19.5% but not more than 23% by volume, and</p> <p>If atmospheric contaminants, including gases, vapours, fumes, dusts or mists, are present, their concentrations do not exceed what is reasonable in the circumstances for the protection of the health and safety of workers</p>

Adequately	Has a meaning that corresponds to the meaning of adequate
Attendant	<p>Is a worker who is trained in the hazards of confined spaces and whose primary responsibility is to monitor and assist the workers in the confined space</p> <p>Whenever a worker enters a confined space, an attendant will be stationed outside and near the entrance of the confined space.</p> <p>The attendant must be in constant communications with all workers inside the confined space and be provided a means to summon assistance of rescue response as may become necessary.</p> <p>The attendant shall not enter the confined space at any time</p> <p>Attendant functions shall include</p> <ul style="list-style-type: none"> Monitoring the safety of the workers inside Providing assistance to the worker Summoning assistance or rescue response as may become necessary <p>The attendant shall be trained in the functions of the position and the means of communication provided</p>
Cold Work	Work that is not capable of producing a source of ignition
Controlled Access means a fully or partially enclosed space	<p>That is not designed and constructed for continuous human occupancy</p> <p>In which atmospheric contaminants are tested, continuously monitored and effectively controlled to within occupational exposure limits and will not interfere with a person's ability to exit the area unaided</p> <p>Controls are put in place to prevent introduction of a process or material that may create an atmospheric hazard</p>
Constructor	A person who undertakes a project for an owner and includes an owner who undertakes all or part of a project by himself or by more than one employer
Emergency Work	Work performed in connection with an unforeseen event that involves an immanent danger to the life, health or safety of any person
Employer	A person who employs one or more workers or contracts for the services of one or more workers and

	includes a contractor or subcontractor who performs work or supplies services and a contractor or subcontractor who undertakes with an owner, constructor, contractor, or subcontractor to perform work or supply services
Hot Work	Work that is capable of producing a source of ignition. Examples may include welding, cutting, grinding, etc
Inerting	Involves purging oxygen from a confined space using a inert gas (such as nitrogen, carbon dioxide, argon, etc) to remove the hazard of fire or explosion. The inert gas will displace the gases and create an oxygen deficiency, therefore fresh air must be introduced and the atmosphere must be monitored
Lead Employer	An employer who contracts for the services of one or more other employers or independent contractors in relation to one or more confined spaces that are located <ul style="list-style-type: none"> • In the lead employer's own workplace, or • In another employer's workplace
Purging	Displacing contaminants from a confined space
Qualified Worker	A person with adequate knowledge, training and experience to perform the specific assigned work; a qualified worker is equivalent to a competent worker in the construction regulations
Related Work	Work that is performed near a confined space in direct support of work inside the confined space
Supervisor	A person who has charge of a workplace or authority over a worker
Ventilation	Continuous provision of fresh air into the confined space by mechanical means to maintain acceptable atmospheric levels
Examples	Storm or sanitary sewers, vaults, maintenance holes Valve chambers, pump stations, catch basins Trenches, excavations
Hazardous Atmosphere	An atmosphere that is toxic, oxygen deficient, oxydent enriched or explosive

ROLES & RESPONSIBILITIES

Senior Management is responsible for:

- The administration and implementation of this program, ensuring the necessary resources and training are provided and assigning responsibilities
- Ensuring that confined space plans are developed and maintained, and responsibilities delegated; delegated persons will be trained according to the requirements of this procedure

Supervisors/Managers are responsible for:

- Reviewing the project and identifying any potential confined spaces
- Developing, implementing and maintaining site specific Confined Space Entry Plans
- Assign a competent worker to take control of any confined spaces
- Ensuring the policy is being followed

Health and Safety Designate is responsible for:

- Ensuring risk assessments are conducted, as per the Hazard Identification and Risk Assessment Procedure
- Ensuring all staff involved in confined space are trained to the plan, and records of training are retained
- Ensuring that any gaps identified in confined space assessment / permits are built into an improvement action plan, and completed
- Ensuring any submitted reports and subsequent action plans are shared with the JHSC/Health & Safety Representative

Joint Health & Safety Committee (JHSC)/Health & Safety Representative is responsible for:

- Reviewing, at least annually, all emergency response plans, and provide feedback to the Health & Safety Designate

Employees are responsible for:

- Completing appropriate training
 - know hazards associated with confined spaces
 - recognize signs and symptoms of exposure, including behavioural effects
 - understand the consequences of exposure to hazards in these spaces
- Maintain awareness of appropriate personal protective equipment (PPE) and its proper application
- Maintain contact with attendant in charge of the confined space
- Confer with attendant to identify any modification to the space, and review hazards and safeguards associated with confined space entry to determine if additional evaluations are necessary
- Ensure equipment used in confined spaces is properly isolated
 - Entrants may have to complete part or all of the isolation or equipment preparation procedures in cases where the individual responsible for the equipment is unable to do so

- Read the confined space entry permit, if one is required, and agree to accept and abide by its conditions
- Exiting a confined space if
 - Instructed by an attendant
 - An alarm is activated
 - Danger is perceived

Confined Space Attendants are responsible for:

- Knowing the hazards associated with confined spaces; recognizing the signs and symptoms of exposure, including behavioural effects; and understanding the consequences of exposure to hazards in these spaces
- Have training in
 - First aid and CPR
 - The use of appropriate personal protective equipment (PPE)
 - Mechanical retrieval devices
 - On site or project specific rescue procedures
- Ensuring the safety of personnel working in vessels or confined spaces.
- Being alert. Trying to anticipate and prevent any condition that would be hazardous.
- Maintain effective and continuous contact with entrants and an accurate count of all persons working in confined spaces
- Maintain the conditions and requirements listed on the confined space entry permit (if one is required)
- Sign the confined space entry permit, if one is required, and agree to accept and abide by its conditions.
- Not leaving assignment while personnel are inside the confined space, except to get help in an emergency.
 - If other duties require you to leave your assignment, have all personnel evacuate the confined space
- Preventing the fouling of airlines and/or lifelines
- Notifying everyone to evacuate the confined space if you observe a hazardous condition
- Calling EMS via “911” for help if an emergency arises
 - Do not attempt to enter the confined space during an emergency.
 - If possible, an attendant may rescue a victim from a confined space using a retrieval system and without additional help if such rescue does not require entering the space
- Providing the rescue team incident commander with the confined space entry permit, including any information on the events leading up to the emergency

Confined Space Competent Worker is responsible for:

- Taking the training to become a “competent worker” in relation to the confined space entry
- Ensuring individuals under their control received the proper training for confined space entry
- Perform pre-operational review activities in confined spaces and discuss with entrants the potential hazards, appropriate safeguards, and personal protective equipment (PPE) required.
- Knowing the hazards one may encounter upon entering a confined space, including the mode, signs, symptoms, and consequences of exposure
- Checking that necessary procedures, practices, and equipment used for safe entry into confined spaces are in effect before authorizing entry or re-entry
- Sign the confined space entry permit verifying that all actions and conditions necessary for safe entry are provided and will be maintained.

- Ensuring that operations comply with the terms and conditions on the permit
- Taking appropriate measures to remove unauthorized personnel who are in or about to enter confined spaces
- Cancel the permit authorization whenever unacceptable conditions exist or upon completing permitted activities.
 - If unexpected hazards arise, all employees must leave the area immediately and notify the Health & Safety Manager before re-entry
- Ensuring that transfer is made to another authorized supervisor whenever the responsibility for a permit space entry changes, and that the terms and conditions of the permit are maintained
- Providing copies of the permit upon completing the work to organizations listed on the permit
- Maintain copies of all confined space entry permits issued under their cognizance
- Audit compliance with procedures for confined space before each entry
- Take on attendant role
- Take on atmospheric tester role
 - Perform suitable testing of equipment before each use in accordance with the manufacturer's recommendations for that equipment to ensure that it functions properly
 - Perform the tests indicated on the confined space entry permit, including any additional tests that may be necessary
 - Record results of the tests on the confined space entry permit
 - Ensure monitoring procedures test for atmospheric contaminants that are representative of all areas of confined spaces

Subcontractors are responsible for:

- Following the confined space policy
- Subcontractors shall be considered as employees on the site and shall carry the same responsibilities as employees
- Using proper methods and techniques to avoid injuries

PROCEDURE

Confined Space Plans

1. All workers to have Confined Space Awareness training
2. Specific workers who will enter a confined space to have Confined Space Entry training
3. A third party confined space consultant will be hired to manage the Confined Space Site Specific Plan
 - a. Completing a confined space hazard assessment
 - b. Testing confined spaces
 - c. Continual testing will provide data of any changes in atmosphere. If a change is noted:
 - i. Entered personnel will be immediately warned of change
 - ii. Entered personnel given opportunity to evacuate the space before adverse health effects
 - d. Appropriate warning signs will be posted outside actual known confined spaces.

- i. All workers must be aware that an area may be designated as a confined space even if no signs are posted
- e. Prepare and post in a visible location a confined space entry permit
 - i. Prepared by a competent worker trained in confined space testing and entry procedures
 - ii. Ensure all entrants have appropriate applicable training
 - iii. Tests specified on the permit are conducted
 - iv. Procedures and equipment specified on the permit are in place
 - v. All rescue equipment is available, inspected and in good working order, and ready to use
- f. A confined space attendant shall be posted at the entrance prepared, equipped, and trained to provide rescue in an emergency.
- g. Ensure adequate lighting when entering or servicing confined spaces
 - i. Flashlights
 - 1. Extension lamps
 - 2. All portable power tools and lamps used inside a confined space must be properly grounded and equipped with GFCI's
- h. Have available mechanical ventilation for atmospheric hazards
 - i. When testing indicates non-explosive hazardous atmosphere
 - 1. Purge the area with fresh air
 - 2. Provide positive ventilation both before and throughout entry into the confined space
 - a. Place the inlet upwind
 - b. Place the inlet at least 25 feet from the confined space and other atmospheric hazards (e.g. vehicle exhaust)
 - c. Retest the atmosphere for any hazards in question upon completing ventilation procedures
 - d. Provide continuous supply of fresh air as close as possible to the work area before and while workers are working in the confined space
 - e. Continue to perform subsequent tests for hazardous atmospheric conditions at intervals frequent enough to ensure a safe atmosphere
 - ii. Where ventilation has removed a hazard, workers entering the confined space should still wear rescue harness attached to individual lifelines
- i. Use two-way communication with entrants in confined spaces
- j. Have available and ready a retrieval system
- k. Rescue
 - i. Rescue equipment
 - 1. Respirator
 - 2. Communication devices
 - 3. Mechanical retrieval devices
 - 4. Fall protection harness
 - 5. On-going air monitoring
 - 6. Emergency contact numbers
 - ii. Each rescue worker must wear a suitable harness attached to one end of a lifeline by a quick-release catch to permit escape if the lifeline breaks

(provided the harness will not increase the overall risk of the entry or hinder rescue)

- iii. Other end of the lifeline shall be secured outside the entry opening to a retrieval system or another fixed point so that retrieval can begin as soon as the rescuer becomes aware that rescue is necessary
- iv. Harness and lifeline may be required even when no respiratory equipment is needed
- v. When entry is through an opening at the top of a confined space, rescue workers must wear a harness type safety belt that suspends them upright
- vi. If supplied air respiratory protective equipment (SCBA) is required for entry into a confined space
 1. One standby person for every person entering the confined space is required and must be immediately outside the confined space
 2. Each standby person shall have a means to immediately contact EMS (911)
 3. Each standby person must be fully trained in "non-entry rescue of personnel in confined spaces"

I. Non-entry rescue of personnel in confined spaces

- i. Do not attempt to enter the confined space during an emergency
- ii. An attendant may rescue a victim from a confined space using a retrieval system or combination of retrieval system along with SCBA
- iii. Obtain help via EMS (911) and other on-site employees
- iv. Attempt to retrieve the person(s) from outside the confined space using a harness retrieval system or other equipment.
 1. Do not enter the confined space or attempt to rescue unless designated by the incident commander, and using SCBA equipment with a retrieval system
- v. If able to retrieve the person, evacuate the confined space and remove the victim from the area immediately
- vi. Immediately check for injuries and life threatening conditions.
- vii. Render whatever first aid you are qualified to render until medical help arrives

Hot Work

In order to perform hot work such as welding, burning, grinding, etc. in the presence of an explosive or flammable gas or vapour, the following precautions shall be taken:

- The space is purged and continuously ventilated to maintain an atmosphere of less than 5% of the lower explosive level (LEL);
- The space is purged and continuously ventilated to maintain an oxygen concentration of less than 23%;
- The atmosphere in the confined space is continuously monitored;
- The entry permit includes adequate provisions for hot work and details the appropriate measures to be taken; and
- An adequate warning system and exit procedure are in place to provide adequate warning and allow safe escape if the concentration of explosive or flammable gas exceeds 50 % of the LEL or the oxygen concentrations exceed 21%.
- Alternately, the space must be rendered safe by using an inert gas and continuously monitoring the atmosphere, particularly with regard to oxygen concentration. Workers must

wear adequate respiratory protective equipment and equipment to allow persons outside the confined space to locate and rescue them, if necessary.

Confined Space Entry Permit

- A confined space entry permit shall be completed by the Project Supervisor before any employee enters a confined space. Each confined space shall have an entry permit specific to the confined space entered.
- The permit shall include (see Section 7.7A – Forms of the program for current permit):
 - Date
 - The name or code number and location of the confined space.
 - A description of the work to be performed there.
 - A description of the hazards and the corresponding control measures.
 - The time period for which the entry permit applies.
 - The name of the attendant described in section 15
 - A record of each worker's entries and exits.
 - A list of the equipment required for entry and rescue,
 - Verification that the entry and rescue equipment is in good working order.
 - Results obtained in atmospheric testing under section 18.
 - If the work to be performed in the confined space includes hot work, adequate provisions for the hot work and corresponding control measures (see Section 6.5 of the H&S program).
- The entry permit, during the time period for which it applies, is readily available to every person who enters the confined space and to every person who performs related work with respect to the confined space.
- A separate entry permit is to be issued before any worker enters the confined space each time the time period stated on the permit has expired.
- Before each shift, a competent person shall verify that the entry permit complies with the relevant plan.

Confined Space Rescue

- No worker shall enter a confined space unless adequate written on-site rescue procedures have been developed and an adequate number of persons trained in confined space rescue are available for immediate response.
- No employee shall enter a confined space to affect a rescue unless:
 - The employee is trained on confined space hazards and rescue methods,
 - The employee has donned all appropriate personal protective equipment,
 - Help has arrived at the site, including a person trained in artificial respiration,
 - Emergency equipment including extra self-contained breathing apparatus, fire extinguishers, stretcher and first aid shall be brought to the site at the sound of the alarm.
- The rescue equipment provided shall be,
 - Readily available to affect a rescue in the confined space;
 - Appropriate for entry into the confined space; and
 - Inspected as often as is necessary to ensure it is in good working order, by a person with adequate knowledge, training and experience who is appointed by the employer.

- The inspection shall be recorded in writing by the person, and the record of the inspection may be incorporated into the entry permit.

Personal Protective Equipment

- In addition to normally used personal protective equipment including hardhat, safety glasses and safety boots, wear the following:

Ear Protection

- All employees in a confined space where there is a noise level in excess of 85 dBA shall wear suitable hearing protection.

Respiratory Protection

- All employees in a confined space shall wear respiratory protection as follows:

Contaminant Concentration	Respirator
< TWAEV	Voluntary
<10 x TWAEV	Half mask air purifying respirator with cartridges approved for the hazardous material Single use respirator approved for the hazardous material
< 50 x TWAEV	Powered air purifying respirator with cartridges approved for the hazardous material
< 100 x TWAEV	Positive pressure supplied air respirator Self-contained breathing apparatus (SCBA) with a full-face piece operated in the pressure demand mode

Note: TWAEV = Time Weighted Average Exposure Level as set by government regulation or the American Conference of Governmental Industrial Hygienists Threshold Limit Values.

Dated at _____ this _____ day of _____, 20__.

Signature

Witness

Name & Title (please print)

Name

Continuous Improvement Review Tracking		
Date of Review/Change	Notes	Name of Reviewer