The Silent Dangers of Confined Space Meeting Kit

WHAT'S AT STAKE

Confined space safety is the practice of ensuring safe work conditions in fully or partially enclosed areas such as manholes, pipelines, boilers, utility vaults, and storage bins. Confined space safety precautions should be undertaken accordingly to comply with health and safety regulations.

WHAT'S THE DANGER

DANGERS OF CONFINED SPACE. All hazards found in a regular workspace can also be found in a confined space.

- Poor air quality
  - insufficient amount of oxygen for the worker to breathe.
  - toxic gases that could make the worker ill or cause the worker to lose consciousness.
  - asphyxiants – simple asphyxiants are gases which can displace oxygen in the air (normally about 21 percent). Low oxygen levels (19.5 percent or less) can cause symptoms such as rapid breathing, rapid heart rate, clumsiness, emotional upset, and fatigue. As less oxygen becomes available, nausea and vomiting, collapse, convulsions, coma, and death can occur. Unconsciousness or death could result within minutes following exposure to a simple asphyxiant. Asphyxiants include argon, nitrogen, or carbon monoxide.
- Chemical exposures due to skin contact or ingestion (as well as inhalation of toxic gases).
- Fire hazard – An explosive or flammable atmosphere due to flammable liquids and gases and combustible dusts which, if ignited, would lead to fire or explosion.
- Process-related hazards – such as residual chemicals, or release of contents of a supply line.
- Physical hazards – noise, heat, cold, radiation, vibration, electrical, and inadequate lighting.
- Safety hazards – such as moving parts of equipment, structural hazards, engulfment, entanglement, slips, or falls.
- Vehicular and pedestrian traffic.
- Shifting or collapse of bulk material (engulfment).
- Barrier failure that results in a flood or release of free-flowing solid or liquid.

- Visibility – such as smoke particles in air.
- Biological hazards – viruses, bacteria from fecal matter and sludge, fungi, or moulds.

HOW TO PROTECT YOURSELF

CONFINED SPACE SAFETY PRECAUTIONS

Avoid entry to confined spaces. Establish if the work is really necessary or if it can be done in another way that avoids the need to enter. If entry to a confined space is unavoidable then you must follow a safe system of work.

Safe systems of work. Make sure you have all the relevant information, knowledge, and experience to carry out the work. There needs to be a site specific method statement in place for all employees to adhere to before the work is carried out.

Ventilation. You will need to ensure there is suitable ventilation within the workplace. You may have to introduce temporary ventilation before you start.

Isolation. You may need to isolate local utilities to allow your employees to work safely such as

- Gas, water, electricity.

Personal Protective Equipment (PPE). Ensure your employees have proper:

- head, hand, and foot protection
- eye and hearing protection
- waterproof and thermal clothing
- respirators and breathing apparatus.
- appropriate safety harnesses.

Emergency procedures. Put emergency arrangements in place before any work starts.

They must be appropriate to the hazard presented by the activity.

- There must be an effective means of communication for raising the alarm both from the confined space and by someone outside.
- Work in confined spaces is often carried out at night, weekends, and times when the premises are closed, for example holidays. Consider how the alarm can be raised.
- Provide rescue and resuscitation equipment. This will depend on the likely emergencies identified.
- It may be necessary to shut down any adjacent plant before attempting emergency rescue. Ensure access and a means to safely shut down is available.
- Consider how the local emergency services would be made aware of an incident. Plan access routes.

Rescuers. Those who are identified as rescuers need to be:

- ready at hand.
- properly trained.
- fit to carry out their task.
- protected against the cause of the emergency.
- capable of using equipment provided for rescue, like breathing apparatus, and fire-fighting equipment.

Training. Training is critical in all work with confined spaces. This will include

emergency procedures and if required training in the use of breathing apparatus.

HOW TO CONTROL HAZARDS FOR CONFINED SPACE ENTRY

- **Monitor the Situation** – Someone outside of the confined space should be monitoring the condition of the person doing the work. If they show signs of distress, the outside worker can help pull them to safety.
- **Air Supply** – If the confined space has a limited air supply, make sure that a safe supply is brought in.
- **Monitor for Gasses** – Air should be constantly monitored for dangerous gases.
- **Tether the Worker** – When working in very small areas the worker should be tethered either on the feet or around the waist so they can be pulled out if something goes wrong.
- **Watch for Collapse** – Confined spaces are in caves, mines, or where risk of a collapse is present.
- **Personal Protection Equipment** – Anyone entering a confined area should wear the PPE.

FINAL WORD

Given the risks associated with work in confined spaces, it’s imperative that employers take training seriously. Far too many companies emphasize increasing performance and productivity to simply get the work done, failing to adequately train their workers on proper procedures, hazards, and precautions.