

Confined Space Management

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Permit to Work Procedure			

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Please note:

If you require a copy of this procedure in an alternative format (for example Large Print, Easy Read) or would like any assistance in relation to the content of this procedure, please contact the Human Resources (HR) team on 01803 656680.

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1. Introduction

Many workplaces contain spaces that are considered to be “confined” because their configurations hinder the activities of any employees who must enter into, work in and exit from them.

There are specific responsibilities for the employer and employees to accidents within confined spaces under the following Acts and Regulations.

1.1 Health and Safety at Work Act 1974

This requires employers to ensure the health and safety of all employees and anyone who may be affected by their work, including any and all visitors to any part of the Trust’s premises. This includes taking steps to control confined spaces risks. Employees must not endanger themselves or others and must use any safety equipment provided. Manufacturers and suppliers have a duty to ensure that their products are safe. They must also provide adequate information about appropriate use.

1.2 Management of Health and Safety at Work Regulations 1999

These build on the Act and include duties on employers to assess risks and where necessary take action to safeguard health and safety.

1.3 Confined Spaces Regulations 1997

The Regulations place duties on employers, the self- employed, and any person who controls the work of others (e.g. facilities managers or building owners who may contract others to work in confined spaces) to the extent they control the work

2. Purpose

The purpose of this document is to enable the Trust to ensure that it provides, so far as is reasonably practicable, a safe working environment free from confined space hazards by ensuring that potential hazards in the workplace are identified, a suitable and sufficient risk assessment is undertaken, and a safe system of work developed and managed.

It sets out the steps to be taken by the Trust to ensure that staff/others do not work within confined spaces where it can be avoided. Where it is not possible all individuals entering a confined space must operate under a Permit to Work (PTW) in line with the Trust procedure.

3. Definitions

3.1 Confined Space

A “confined space” means any place, including any chamber, tank, vat, pit, trench, pipe, sewer, flue, well, service ducts or other similar space in which, by virtue of its enclosed nature, there arises a reasonably foreseeable specified risk.

Under the Regulations a “confined space” must have both of the following defining features:

- It must be a space which is substantially (though not always entirely) enclosed; and
- One or more of the specified risks must be present or reasonably foreseeable.

Some confined spaces are fairly easy to identify, for example sewers and closed tanks used to store chemicals. However, identification may not always be so easy, as a confined space **is not necessarily**:

- Enclosed on all sides – some, such as vats, and sumps, may have open tops or sides
- Small and/or difficult to work in – some, like plant rooms and tunnels, can be very large
- Difficult to get in or out of – some have several entrances/exits, others have quite large openings or are apparently easy to escape from
- A place where people do not regularly work – some confined spaces (such as those used for spray painting in car repair centres) are used regularly by people in the course of their work.

A flow chart to assist in the identification of a confined space can be seen at Appendix 1.

3.2 Specified Risk

A “specified risk” means a risk of:

- Serious injury to any person at work arising from a fire or explosion
- The loss of consciousness of any person at work arising from an increase in body temperature
- The loss of consciousness or asphyxiation of any person at work arising from gas, fume, vapour or the lack of oxygen
- The drowning of any person at work arising from an increase in the level of liquid
- The asphyxiation of any person at work arising from a free flowing solid or the inability to reach a respirable environment due to entrapment by a free flowing solid

4. Roles and Responsibilities

4.1 Chief Executive

The Chief Executive has overall responsibility for the implementation of this procedure and in turn this responsibility is discharged to the Director of Estates & Commercial Development.

4.2 Director of Estates and Commercial Development

The Director of Estates and Commercial Development is responsible for the operation and management of Confined Spaces within the Trust and the successful

implementation, management and monitoring of this procedure.

4.3 Head of Estates Operations

The Head of Estates Operations is responsible for:

- Ensuring a register and drawings is maintained of all Trust confined spaces
- Provision and recording of risk assessments and method statements for all work in Confined Spaces
- Implementation of appropriate safe systems of work and recording of safety documentation
- Maintenance of a register of specialist contractors approved for working in confined spaces
- Control of specialist contractors working in confined spaces
- Ensuring that the Trust's Estates staff are appropriately trained and supervised when working in a confined space
- Ensuring all air quality monitoring equipment is well maintained and calibrated

4.4 Estates Managers

Estates Managers are responsible for:

- Ensuring unauthorised access to confined spaces is prevented
- Avoiding entry into a confined space as far as is reasonably practicable
- Ensuring that, where entry into any confined space cannot be avoided, a suitable and sufficient assessment of the risks to health has been carried out
- Ensuring that all staff involved in entry into confined spaces are aware of this policy, understand its contents and comply with local procedures and safe systems of work
- Ensuring employees are consulted when assessing the risks connected with entering or working in a confined space
- Ensuring that prior to entry into a confined space, a written safe system of work, including emergency procedures, has been developed and a PTW issued, and that suitable equipment is provided
- Ensuring all staff that will enter a confined space are fit to do so, and seeking Occupational Health advice where appropriate

- Ensuring that all staff that will enter confined spaces and those who issue a PTW, have appropriate information, instruction, training and supervision in confined space working
- Ensuring the confined spaces register is populated and kept up to date

4.5 Estates Managers and Supervisors who issue a PTW

Those who issue a PTW are responsible for:

- Assessing all associated risks involved in the entry into confined spaces
- Developing a safe system of work for the confined space
- Ensuring all necessary precautions, equipment and emergency procedures are taken
- Ensuring suitable and sufficient equipment is provided to be involved in confined spaces work
- Checking with employees, that they are fit and healthy and confirm their suitability for work in confined spaces
- Checking safety at each stage of the work
- The issue of the permit to work and its cancellation

4.6 Employees

All employees have a responsibility to abide by this procedure and any decisions arising from the implementation of it and are responsible for:

- Contacting their line manager if they have any concerns or doubts about their safety due to the condition of location they are being asked to work in.
- Assisting with the assessment of risks
- Complying with any safe system of work developed through risk assessment and any requirements of a permit to work
- Ensuring they are physically fit and healthy to be involved in work with confined spaces and notifying their line manager of any changes
- Ensuring all equipment is available and is suitable and sufficient
- Informing their managers if they suspect that the system of work in place is ineffective or inadequate
- Reporting all incidents (including near misses and any defects in equipment) using the Trusts designated incident reporting system.

- Securing all confined spaces against unauthorised access
- Reporting any significant confined space hazards that they become aware of to their manager

5. Risk Assessment

If it is not reasonably practicable to avoid the need to work in a confined space the duty holder must assess the risks connected with entering or working in the space. The assessment should identify the risks to those entering or working there, and also any others, for example other workers including contractors and the general public in the vicinity who could be affected by the work to be undertaken. The risk assessment must be carried out by someone competent to do so.

A competent person for these purposes will be someone with the necessary skills, knowledge and experience of, and familiarity with, the relevant processes, plant and equipment so that they understand the risks involved and can devise necessary precautions to meet the requirements of the Confined Spaces Regulations. In complex cases more than one person may be needed to assess the risks relating to specific areas.

The risk assessment should look at the following areas:

- Hazards within the space e.g. contaminants, heat, electrical, radiation, sparks and gases
- Work required to be done within the space, including whether it is necessary to enter
- The range of methods by which work can be done
- Equipment required and the hazards associated with these e.g. welding in a flammable area can be hazardous
- Number of persons required to enter the space, number required outside space to maintain equipment essential for work in the confined space and for communication with those inside
- The identity and nature of the substances last contained in the confined space
- The atmospheric testing to be undertaken and the parameters to be tested before PTW is issued
- The availability and adequacy of personal protective equipment
- Whether cleaning the confined space is necessary
- Whether hot work is to be conducted within the space
- Whether certain activities, equipment or substances should be prohibited from the area e.g. naked flames, combustion sources

An example of the hazards associated with confined spaces has been attached at Appendix 2

6. Training

Workers must have adequate training and experience in the particular work involved to be competent to work safely in a confined space. Training standards must be appropriate to the task, and to the individual's roles and responsibilities, so that work can be carried out safely. Where the risk assessment indicates that properly trained individuals can work for periods without supervision, checks should be made that they are competent to follow the established safe system of work and have been provided with adequate information and instruction about the work to be done

7. Safe System of Work (SSOW)

Where it is not reasonably practicable to avoid entering a confined space to undertake work, the duty holder is responsible for ensuring that a SSOW is used. In designing a SSOW, they should give priority to eliminating the source of any danger before deciding what precautions are needed for entry.

To be effective, a SSOW should be in writing and set out the work to be done and the precautions to be taken including:

- The safe means of access and egress
- The risk control measures and the reasons for their application
- The means for preventing unauthorised access when there is no need for anybody to access the confined space
- The means of emergency evacuation

When written down it is a formal record that all foreseeable hazards and risks have been considered in advance, and the necessary precautions have been taken and are in place before the work is allowed to begin. The safe procedure consists of all appropriate precautions taken in the correct sequence. In the development of a written SSOW, the information gathered during the risk assessment should be used. In practice, a SSOW will only ever be as good as its implementation.

8. Communications

All work in confined spaces will be carried out by a minimum of 2 persons; one person will act as the safety person and will remain at the entrance to the confined space throughout the work. An adequate communication system must be in place and should enable communication:

- Between those inside the confined space
- Between those inside the confined space and those outside
- To summon help in case of emergency

Whatever system is used, and it can be based on speech, tugs on a rope, the telephone, radio etc, all messages should be able to be communicated easily, rapidly and unambiguously between relevant people. Consideration must be given to whether the communication methods are appropriate for any workers wearing breathing apparatus.

The communication system should also cover the need for those outside the space to raise the alarm and set in motion emergency rescue procedures.

Equipment such as telephones and radios should be specially protected so that it does not present a source of ignition where there is a risk of flammable or potentially explosive atmospheres.

9. Testing/monitoring the atmosphere

Prior to entry, the atmosphere within a confined space should be tested to check the oxygen concentration or for the presence of hazardous gas, fume or vapour.

Testing should be carried out where knowledge of the confined space (e.g. from information about its previous contents or chemicals used in a previous activity in the space) indicates that the atmosphere might be contaminated or to any extent unsafe to breathe, or where any doubt exists as to the condition of the atmosphere. Testing should also be carried out if the atmosphere was known to be contaminated previously, was ventilated as a consequence, and needed to be tested to check the result.

10. Permit to Work (PTW)

A PTW system is a formal written system and is usually required where there is a reasonably foreseeable risk of serious injury in entering or working in the confined space.

The PTW procedure is an extension of the safe system to work, not a replacement for it. The use of a PTW system does not, by itself, make the job safe. It supports the SSOW, providing a ready means of recording findings and authorisations required to proceed with the entry. It also contains information, on results of the gas testing, and other information that may be required during an emergency and which, when the job is completed, can also provide historical information on original entry conditions.

All work in Confined Spaces will be controlled by a PTW using the Estates Confined Space Permit to Work Procedure, which is a separate document, a copy of which can be seen at Appendix 3.

11. References

The following references and further reading are applicable to this document:

- Health and Safety at Work Act etc 1974
- Management of Health and Safety at Work Regulations 1999
- Confined Spaces Regulations 1997

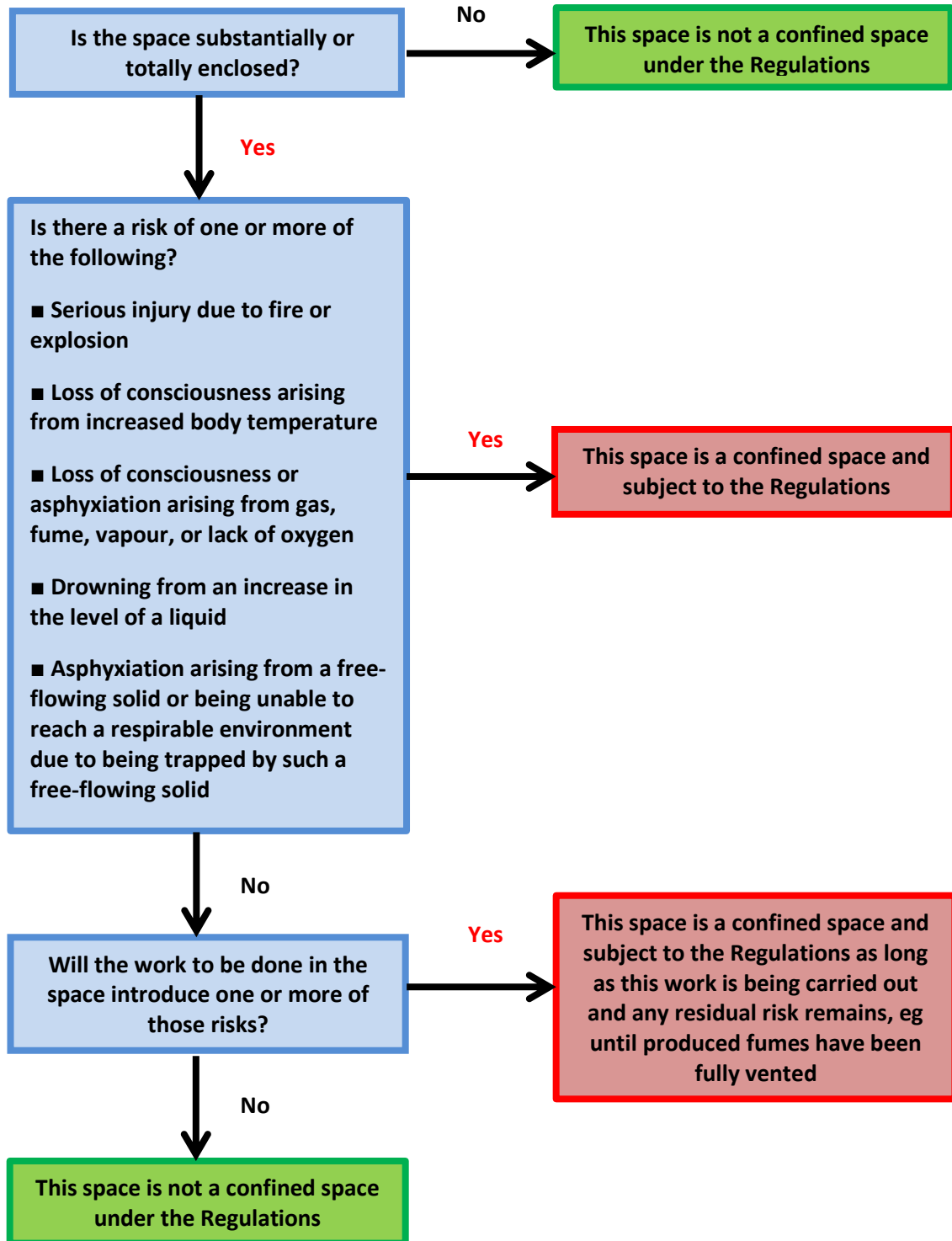
12. Appendices

Appendix 1 – Confined Spaces Flow chart

Appendix 2 – Examples of the hazards associated with confined spaces

Appendix 3 – Copy of the Estates Confined Spaces PTW Form (Separate Document)

Appendix 1



Appendix 2

Hazards of Confined Spaces

The hazards of working in a confined space arise through a combination of the nature of the working space itself, and the possible presence of substances or conditions which, taken together, increase the risk to the employee's health and safety. A serious risk can be introduced to a substantially enclosed space that otherwise would be safe. The most likely hazards (but not the only ones) are:

1. Oxygen Deficiency

Below the usual level of about 20.9%, people become less able to function properly and eventually lose consciousness. Oxygen deficiency can be caused by biological or chemical processes consuming the oxygen in an enclosed chamber; as a result of purging with an inert gas to remove contaminants; or as a result of the work itself e.g. welding or even the respiration of workers if the fresh air is inadequate.

2. Toxic Gases Fumes or Vapour

Toxic vapours of many types can accumulate in a confined space for a variety of reasons. These include:

- Vapour from disturbed deposits or sludge, remains from previous processing or storage, or residues from cleaning
- Vapour produced by the work itself e.g. welding fume, lead fume, brush or spray painting, solvents from cleaning
- Vapour produced by work outside the confined space can also cause fumes to be given off inside
- Vapour can seep in from surrounding areas whilst work is in progress

If the presence of contaminated air is known or suspected, stringent precautions must be taken to protect those inside or about to enter.

3. Ingress of Water, Other Liquids or Free-Flowing Solid Substances

Work in a tunnel or duct, or in a large chemical plant could result in someone inside finding themselves in water (or another liquid) which is rising dangerously. A similar danger of drowning exists with free flowing solids like grain, or finely divided chemicals in large store facilities like a storage bin. Inadvertent operation of machinery could result in gas or steam being allowed to enter where people are at work.

4. Flammable Substances and Oxygen Enrichment

Biological and chemical processes can also cause oxygen concentration in a confined space to rise. If this is coupled to the presence of flammable or explosive gases (or dust) and a source of ignition, then there is a real risk of fire or explosion.

7. Excessive Heat

The presence of elevated (or rising) temperatures will exacerbate the exhausting effects of strenuous work, and increase the possibility of fire or explosion, or increase the generation of toxic fume or vapour.

Appendix 3 – example copy of Confined Space Permit to Work Form

Torbay and South Devon

NHS Foundation Trust

Estates and Facilities Standard Form

Confined Space Permit to Work

Applicability: This permit establishes that all hazards have been identified and controlled and it lists the confined space entry supervisor and authorised entrants and attendants.

Instructions: This form must be signed by the authorising person, Section 5, before entry and it must be kept at the works location. Once the work is completed, the authorising person must close the permit by signing Section 6.

NB – Working in a confined space is strictly prohibited unless all other practicable measures not to enter have been considered

1. Permit Conditions Permit No.

Reason for entry:	Permit Valid On			
	Date			
	Time	From	To	
Names of Personnel	Duty/Responsibility			
	Supervisor			
Location/Site Address:				
Known and potential hazards:				
Additional required permits (for example hot work):				

2. Requirements Checklist *(tick all that apply and specify as necessary)*

Risk Assessment attached	<input type="checkbox"/>	Method Statement Attached and Approved	<input type="checkbox"/>
Equipment		PPE	
<input type="checkbox"/> Full Body Harness	<input type="checkbox"/> Tripod/hoist	Gloves	<input type="checkbox"/> Leather <input type="checkbox"/> Impervious
<input type="checkbox"/> Lifeline	<input type="checkbox"/> Gas Monitors	Gloves	<input type="checkbox"/> Chemical <input type="checkbox"/> Other
<input type="checkbox"/> Warning Signs	<input type="checkbox"/> Guarding	Face / Eye Protection	
<input type="checkbox"/> Ladder	<input type="checkbox"/> Fall Protection	<input type="checkbox"/> Goggles	<input type="checkbox"/> Face Shield
<input type="checkbox"/> Ventilation Fan or blower	<input type="checkbox"/> Coveralls (Type) :-		
<input type="checkbox"/> Fire Extinguisher (Type) :-	<input type="checkbox"/> Footwear (Type) :-		
<input type="checkbox"/> Self Contained breathing apparatus (SCBA)	<input type="checkbox"/> Head Protection		
<input type="checkbox"/> Radio	<input type="checkbox"/> Lighting (Hazardous Location Rated)		
<input type="checkbox"/> Other :-			

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