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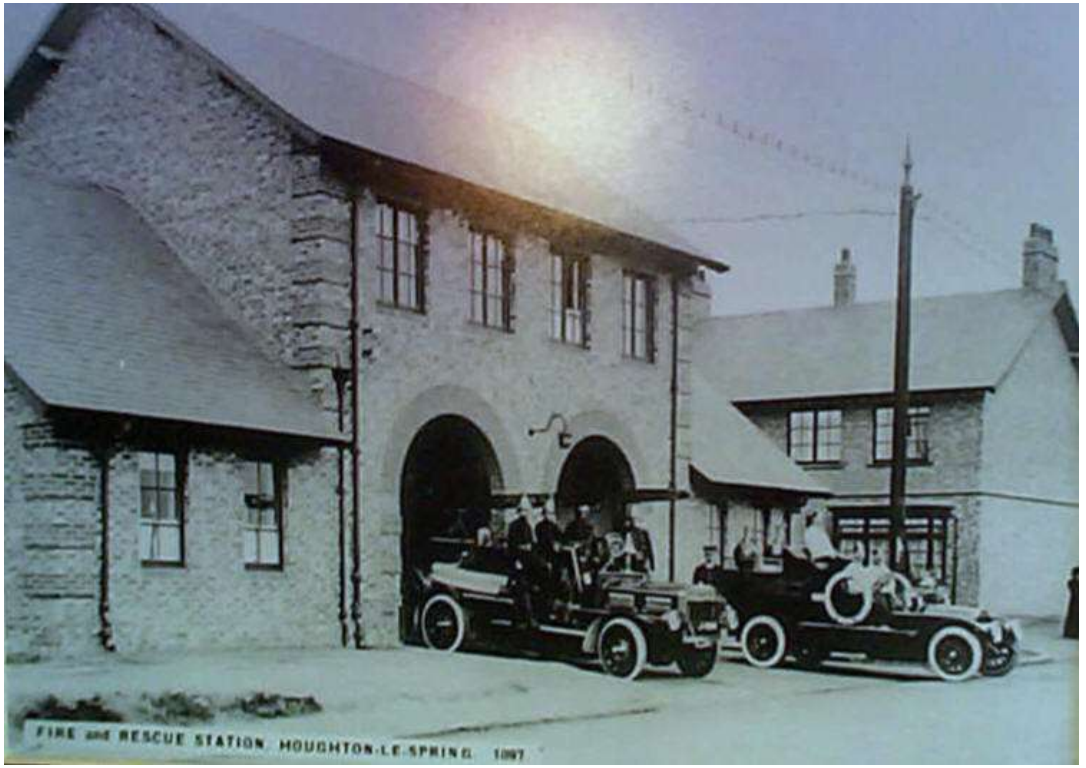

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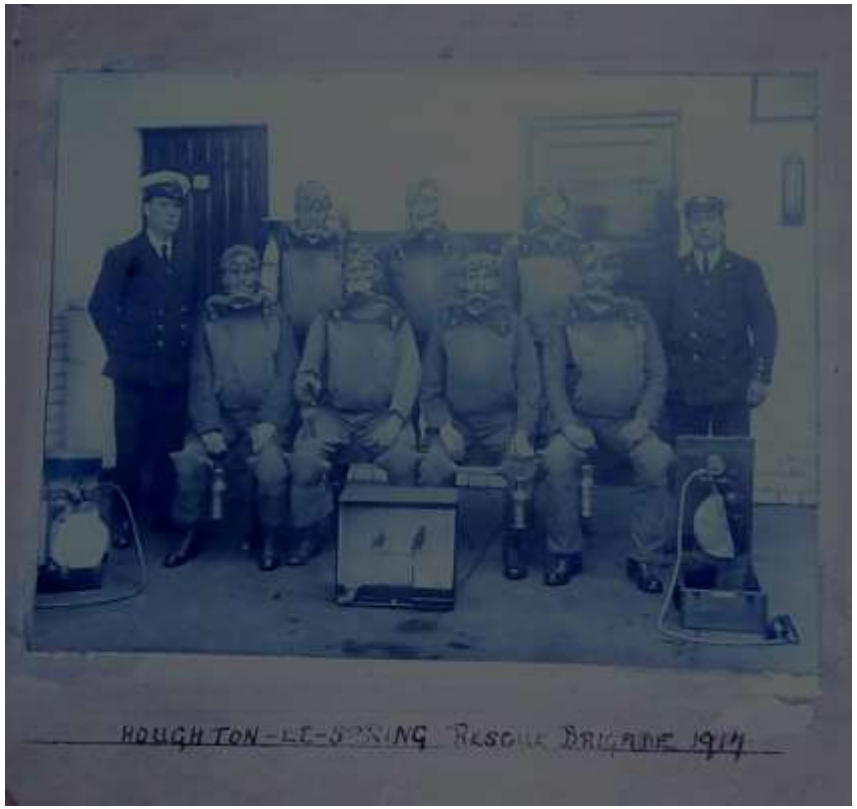
Durham Area Accidents & Disasters

• **Seaham**	**8th Sept**	**1880**	**164 Killed**
• **Trimdon Grange**	**16th Feb**	**1882**	**69 Killed**
• **West Stanley**	**19th Apr**	**1882**	**13 Killed**
• **Elemore**	**2nd Dec**	**1886**	**28 Killed**
• **Branscepath A Pit**	**6th Sept**	**1896**	**20 Killed**
• **West Stanley**	**16th Feb**	**1909**	**168 Killed**
• Murton	26th Jun	1942	13 Killed
• Morrison Old	22nd Aug	1947	21 Killed
• Easington	29th May	1951	81 Killed

My Experience

Experience



Kirkby Thore Mine

Marine Experience

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Marine Experience. GHANA

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Nuclear PowerStation

Legislation

HSE

Health and Safety Executive

Safe work in confined spaces

Confined Spaces Regulations 1997

Approved Code of Practice and guidance

L101 (Third edition, published 2014)

This Approved Code of Practice (ACOP) and guidance is for those who work or control work in confined spaces.

It explains the definition of a confined space in the Regulations and gives examples. It will help you assess the risk of working within a particular confined space and put precautions in place for work to be carried out safely.

This edition brings the ACOP up to date with regulatory and other changes. The guidance has been simplified to make the understanding and use of the document easier, particularly with clarifying the definition of a confined space.

Other changes include a flowchart to help in the decision-making process, additional examples including new workplace risks (such as specifically created hypoxic environments, fire suppression systems etc), and amendments relating to the need to check, examine and test equipment.

Definition / Overview Confined Space

Definition:-

Any place, including any chamber, tank, vat, silo, pit, trench, pipe, sewer, flue, well or other similar space in which, by virtue of its enclosed nature, there arises a reasonably foreseeable specified risk

Overview:-

- Avoid entry
- Risk assess
- Control measures
- SSW
- Emergency arrangements

UK Water Classifications

OCCASIONAL GUIDANCE NOTE

The Classification & Management of Confined Space Entries

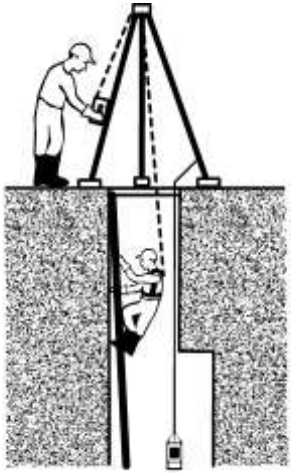
INDUSTRY GUIDANCE

Edition 2.2
October 2009

Water UK Classification of Confined Spaces

NC1 low risk shallow entry with adequate natural or mechanical ventilation, where access is simple and unobstructed and there is no likely risk of flooding e.g. meter pits, valve chambers, booster-pumping stations, PRV chambers.

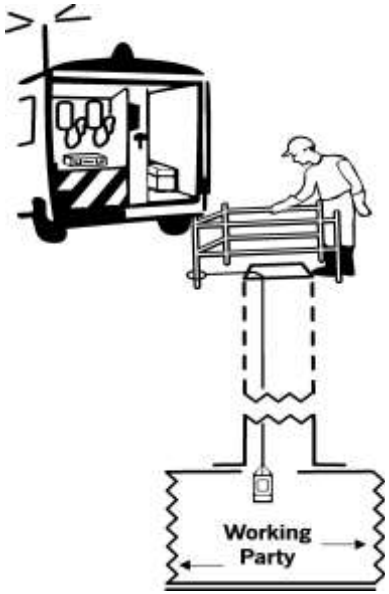
NC2 vertical, direct, unobstructed access with continuous attachment to a man riding hoist or similar mechanical rescue device.



Water UK Classification of Confined Spaces

NC3 when it is not possible to have persons permanently attached to a safety line.

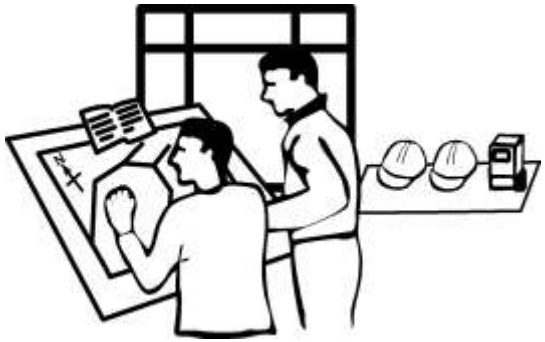
Usually a team entry which moves away from the entry point e.g. man entry sewers, utility service subway tunnels, aqueducts and complex wet wells. Working without an attached rescue line and includes working away from the point of entry.



Water UK Classification of Confined Spaces

NC4 non-standard entries involving complex operations which introduce additional risks and require specific controls and rescue arrangements

e.g. mechanical hazards, physical complexity of system, introduced hazards, enhanced specific intrinsic hazards (requires Safe System of Work/Permit to Work).



NOS - Classification of Confined Spaces. Energy Utility Skills Council

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- **Low Risk** – Simple, unobstructed access; sufficient natural / mechanical ventilation; no likely risk of flooding

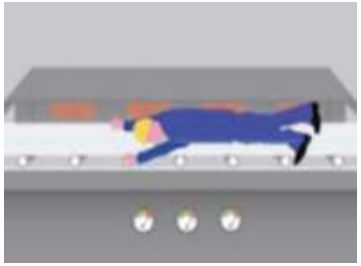
- **Medium Risk –** Requires use of escape sets; requires person outside area controlling entries; requires use of access equipment; may have more than one person entering/working

- **High Risk** – Requires wearing of breathing apparatus to work; complex entries; requires personnel who can deal with an emergency

Specified Risks

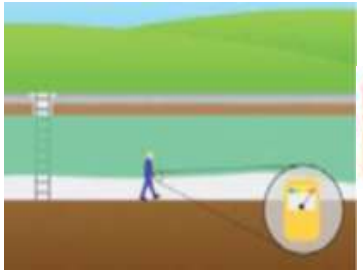
Serious injury to any person arising from a **fire** or **explosion**.

Examples – Fumes left in a tanker, flammable chemicals, flammable dusts such as sugar/flour.



A **loss of consciousness** of any person at work arising from an **increase in body temperature**.

Examples – Bakery ovens, furnaces, boilers, steam cleaning, hot work, hot weather conditions.



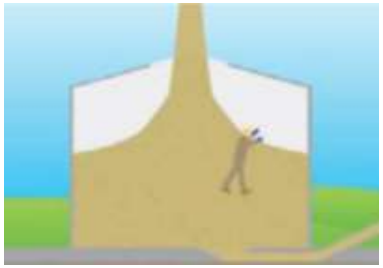
A **loss of consciousness** or **asphyxiation** of any person at work **arising from gas, fume vapour or lack of oxygen**.

Examples – Disturbing sludge deposits, decaying material, use of chemicals/solvents, hot work, leaks in system, fumes from plant/machinery/vehicles, oxidation metals, strata

Specified Risks

The **drowning** of any person arising from an **increase in the level of liquid**.

Examples – Flash floods, failure of isolations.



The **asphyxiation** of any person arising from a **free flowing solid** or the **inability to reach a respirable environment** due to the **entrapment** by a free flowing solid.

Examples – Grain, flour, sand, col dust in hoppers, bunkers, silos.

NOTE:

THESE HAZARDS MAY BE NATURALLY PRESENT OR MAY BE INTRODUCED WHEN DOING WORK IN A CONFINED SPACE

Confined Space Flowchart

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Is the space **substantially or totally enclosed**?

No → This space **is not** a confined space under the 1997 Regulations

Yes

Is there a risk of one or more of the following?

- Serious injury due to fire or explosion
- Loss of consciousness arising from increased body temperature
- Loss of consciousness or asphyxiation arising from gas, fume, vapour or lack of oxygen
- Drowning from an increase in the level of a liquid
- Asphyxiation arising from a free flowing solid or being unable to reach a respirable environment due to being trapped by a free flowing solid

Yes → This space **is** a confined space under the 1997 Regulations

No

Will the planned works introduce **one or more of those risks?**

Yes → This space **is** a confined space under the 1997 Regulations

No

This space **is not** a confined space under the 1997 Regulations

Risk Assessment

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Generic

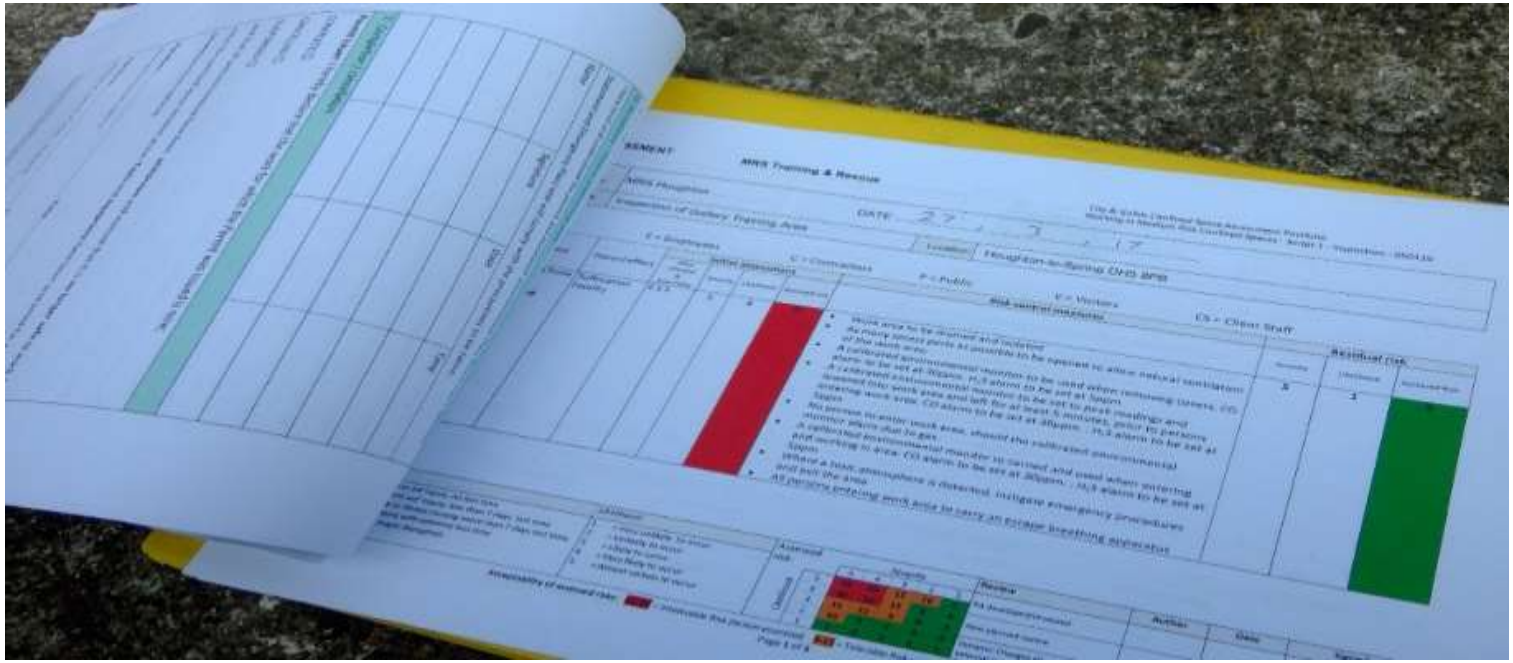
Point of Work

Adequate control measures

Training

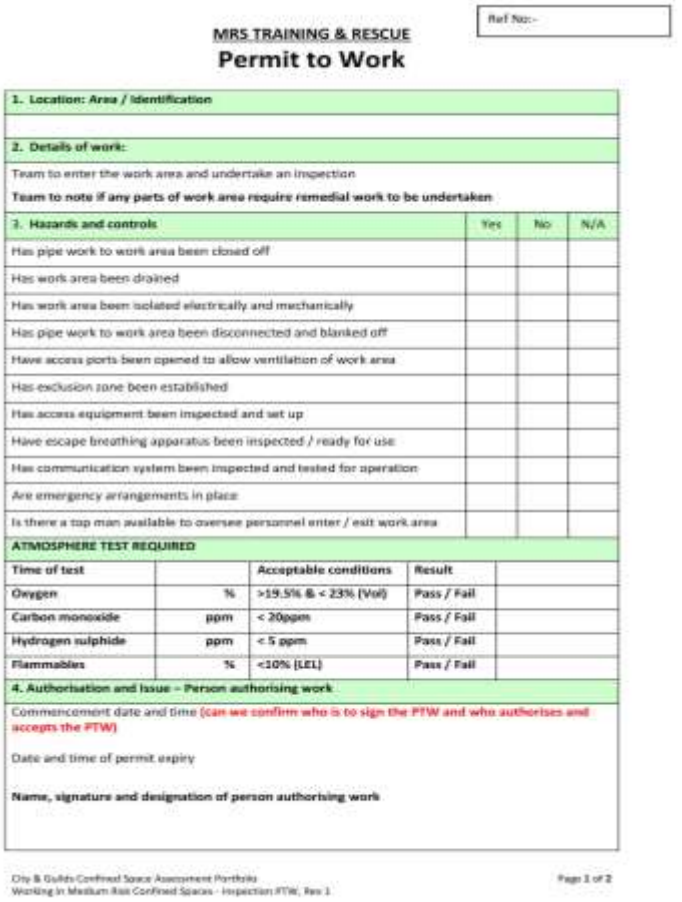
Emergency Arrangements.

H&S Documents



Permit to work

- A PTW 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 of work, not a replacement for it. The use of a PTW does not, by itself, make the job safe
- It can form part of a SSW required under Section 2 of the HSW Act 1974 and the MHSW Regulations thus making a completed form a legal document. Key personnel are required to sign elements of the PTW to confirm that one or more control measures have been put in place to control a hazard which has potential to cause serious harm/death to persons



Ref No:-

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Permit to Work

1. Location: Area / Identification			
2. Details of work:			
Team to enter the work area and undertake an inspection **Team to note if any parts of work area require remedial work to be undertaken**			
3. Hazards and controls	**Yes**	**No**	**N/A**
Has pipe work to work area been closed off			
Has work area been drained			
Has work area been isolated electrically and mechanically			
Has pipe work to work area been disconnected and blanked off			
Have access ports been opened to allow ventilation of work area			
Has exclusion zone been established			
Has access equipment been inspected and set up			
Have escape breathing apparatus been inspected / ready for use			
Has communication system been inspected and tested for operation			
Are emergency arrangements in place			
Is there a top man available to oversee personnel enter / exit work area			

ATMOSPHERE TEST REQUIRED				
Time of test		**Acceptable conditions**	**Result**	
Oxygen	%	>19.5% & < 23% (Vol)	Pass / Fail	
Carbon monoxide	ppm	< 20ppm	Pass / Fail	
Hydrogen sulphide	ppm	< 5 ppm	Pass / Fail	
Flammables	%	<10% (LEL)	Pass / Fail	

4. Authorisation and Issue – Person authorising work

Commencement date and time (can we confirm who is to sign the PTW and who authorises and accepts the PTW)

Date and time of permit expiry

Name, signature and designation of person authorising work

City & Guilds Confined Space Assessment Portfolio
Working in Medium Risk Confined Spaces - Inspection PTW, Rev 1

Page 1 of 2

What's the problem ?

Effects of reduced oxygen

21-19% - Fit for respiration (as long as no other contaminants present)

16% - Dizziness, shortness of breath, increased heart and respiration rate, concentration and reasoning diminished, ability and awareness to make recovery decisions highly impaired

10% - Nausea, vomiting, muscular incapacity

6% - Rapid loss of consciousness and death

IF ENTRY IS MADE TO A SEVERELY DEFICIENT ATMOSPHERE DISORIENTATION CAN BE SO QUICK (LESS THAN 1 MINUTE), RECOVERY IS IMPOSSIBLE

Case Studies

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26th May 2014

Case studies

Case studies

Case studies

Statistics

- 12th July 2004 Thetford. 3 Deaths
- 9th July 2008 Viking Islay. 3 Deaths
- 15th Sept. 2012 Farm (Co. Down). 3 Deaths

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Dealing with an Emergency

Emergency Arrangements Should Cover

In the unlikely event of an emergency, you'll want to make sure that you know and are able to follow emergency procedures should a dangerous situation arise.

This should be communicated to you during briefings before you enter or work in the confined space.

Regulation 5 (confined space regulations) requires that no one should enter or work in a confined space unless there are emergency arrangements in place that are appropriate for the level of risk involved in the task/space. These should include making provision for extracting workers from the confined space and making provision for first-aid equipment (including resuscitation equipment) where the need can be foreseen.

161. Reliance on the emergency services alone will not be sufficient to comply with these Regulations. Employers must put in place adequate emergency arrangements before the work commences.

Any Questions?

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