

NO ROOM FOR ERROR.

**The urgent need for clarity in
confined space safety training.**

Shining a clear light on the complexities of confined space working

Every year in the UK, around 15 people die from working in a confined space. Despite the plethora of legislation, information, regulations, and guidelines. This is not about doing more training but doing the correct, relevant, and appropriate training for the identified risk.

It's a shocking statistic when the risk is apparent, but it isn't just a UK issue. Around the world, workers continue to die from the often-silent threat of confined space working.

It is a modern-day crisis and not getting any better despite the volume of legislation and training providers. Particularly when legislation has been around for over 20 years.

A major hurdle to solving this issue is the sheer volume and variation of detail on confined space working, which can be confusing and complex for employers and training bookers to navigate effectively.

Lack of a deep knowledge of the rules and regulations can make choosing the right training courses a high-risk business. The stakes couldn't be higher. Get it wrong and it could be fatal. Employers have a legal duty of care to their workers, and if a confined space incident occurs the responsibility rests with them. The solution lies in the absolute clarity of risk and the need for a trusted source of information and advisor.

While there is no 'one size fits all' solution for confined space working, the need for greater clarity and simplicity across industries in all aspects of what is often a life-or-death occupation has never been more urgent. For employers, that greater clarity and simplicity will help in making more informed training choices and potentially save lives.

From the training decisions you make to the management of the confined space and the safety of your people – there is no room for error.

Confined Spaces kill – you don't get a second chance

Working in confined spaces is one of the most dangerous occupations in the world. Most industries, from energy to agriculture, utilities, and many others, can harbour hazards such as flammable, explosive or toxic atmospheres, which can lead to serious incidents or accidents. Some of these hazards are not able to be detected by normal bodily senses due to being invisible to the naked eye. Having no detectable smell or being so highly toxic that even when you become aware, it is often too late to act, if proper precautions are not in place to give early warning or be able to protect you should the hazard become realised. It's why confined spaces are known as the silent killer.

One death or serious injury at work is one too many. And yet, even though we live in a more health and safety-conscious world than ever before, workers continue to die or suffer life-changing injuries from working in confined spaces.

UK fatal injury statistics from [RIDDOR](#) (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations) from 2014/15 to 2022/23 highlight 36 people died because of drowning or asphyxiation, 43 from fire or explosion, 12 from contact with a harmful substance, and 123 from being trapped by something collapsing or overturning on them – including trench collapses. These are all specified risks under the confined spaces regulations.

In the UK, around 15 people every year are killed in confined spaces.

[In 2016, IOSH \(the Institution of Occupational Safety and Health\) reported that around 15 people every year in the UK are killed in confined spaces.](#)

The HSE (Health and Safety Executive) continues to prosecute companies that breach confined spaces regulations. In January this year, an NHS trust in England was fined £480,000 [after an employee suffered a brain injury](#) when he was found unconscious in a manhole. And in 2022, a double fatality resulted in jail sentences for the owners of the company.

It's a global problem. In December last year, [three crew members believed to be in the cargo hold of a vessel in the Philippines died after being found unconscious.](#)

But it's not a new problem. The tragedies at Fresha Bakeries in Leicester in 1998, where [two men died inside a bread oven](#), and Thetford in 2004, where [three men died in a slurry tank](#) – one from falling into a vat and two who tried to save him but were overcome by fumes – continue to remind us of what can go wrong.

In the realm of health and safety, the focus extends beyond fatalities; it encompasses the often overlooked near miss incidents, particularly in confined spaces. A recent incident involving MRS Training & Rescue sheds light on the critical importance of thorough assessments. During an industrial rescue cover operation for a construction project involving sewerage pipe installation, the MRS team encountered a potentially life-threatening situation. During routine morning tests, the gas monitor alarm persistently sounded, indicating a perilously low oxygen level of 6% at the trench's bottom. Swift and decisive action by the MRS rescue team revealed elevated carbon dioxide levels emanating from the soil. Had the trench not been meticulously examined before entry, the consequences could have been dire, underscoring the indispensable role of stringent safety measures in averting potential tragedies.

In confined spaces, dangers can escalate very quickly. **Ignorance is not a legal defence**

Information about confined space entry can be complex and confusing. It is not unusual for organisations (large and small) to have limited knowledge and capabilities to effectively plan, manage and supervise entries in to confined spaces. But employers have a legal duty of care to their workers. If an incident happens, they have a responsibility.

Many employers recognise the dangers of working in confined spaces. There are vast amounts of information on the subject from a growing number of training providers, awarding organisations, regulations and standards. Wading through the quagmire of available details can be complex and confusing. However, employers have a legal duty of care to their workers, and if an incident happens in a confined space, they are responsible.

Pleading ignorance in the aftermath is not a valid excuse.

Supervisors, managers and health and safety professionals often learn about this subject as part of a generalised health and safety qualification such as IOSH & NEBOSH along with other subjects and legislation. This often does not give the depth of knowledge required to enable them to make the informed decisions about confined space hazards and risks. Confined space information, instruction and training needs to be learnt as a specific subject. When quality face-to-face training is carried out, people often go away having learned very valuable information about how to comply and work safely.

This document has been developed by MRS Training & Rescue, a standard-bearer for safety across all industries where confined space entry is required, to highlight some of the most important confined space issues for employers and training bookers.

We believe there needs to be much greater clarity for employers around confined space working. As experts in this field, we can bring our deep understanding, experience and skills to guide and simplify your journey through the current information that can be difficult to navigate.

MRS Training & Rescue has over 120 years of delivering specialist skills, experience, and knowledge of working in confined, difficult, and potentially dangerous environments. With our heritage in the mining industry, which is one of the most dangerous environments in the world, we provide expertise, full transparency on training standards and consultancy to support the best training decisions.

What is a confined space and why are they still killing people?

Despite the introduction of Confined Spaces Regulations in 1997, workers are still being injured or killed in confined spaces. Why?

Several factors can lead to death or injury in confined spaces. These include below-par training, and a lack of proper equipment for retrieval or rescue. Inadequate or poorly maintained personal protective equipment can further compound the problem, compromising safety. NIOSH (National Institute for Occupational Safety & Health) statistics show that about 65% of all confined space deaths were due to a hazardous atmosphere – a risk that could be mitigated by gas monitoring and adequate ventilation.

Compounding these shortcomings, workers may be uninformed about the hazards associated with working in the confined space. And some employers don't recognise that the area their people are working in is classed as a confined space. Often, people think of a confined space as being small, or having a restricted entrance, but the regulatory definition is:

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

As we've described, Regulation 1 of the Confined Spaces Regulations 1997 is clear on what is meant by a confined space. But it doesn't describe what a confined space looks like. They can come in all shapes and sizes. The interpretation of a confined space directs employers and those responsible to take a risk-based approach to determine if the work area is indeed a confined space. It is possible that in normal operation the work area is not a confined space, and it's the introduction of the work activity that changes its classification. The change in classification of the work area is usually associated with the introduction (or elimination) of a specified risk. More details of what is meant by a [specified risk](#) can be found on the MRS training and Rescue website.

The approach to risk assessment and risk management is defined by the Management of Health and Safety at Work Regulations 1999. The Confined Space Regulations 1997 adopt a similar approach, and under Regulation 4 requires that the priority of the risk assessment is to avoid working in confined spaces.

There are new technologies emerging that can increase the potential to avoid working in confined spaces such as [drones for inspection](#) and robots to carry out the work.

Making the decision to enter a confined space

If, after examining all of the options, it is clear that the only alternative is to put people into a confined space then there are factors that need to be assessed, and precautions that need to be included within any safe system of work.

Regulation 3 of the Management of Health and Safety at Work Regulations 1999, places a specific requirement on employers (and the self-employed), to identify the measures that need to be taken to avoid reasonably foreseeable risks from affecting the workers or any others who might be affected by the work activities.

The Confined Spaces Regulations 1997 adopt a similar approach, and under Regulation 4 requires that the priority of the risk assessment is to avoid working in confined spaces.

A risk assessment should be undertaken by a 'competent person' as defined in Confined Spaces Regulation 3 as "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." It is often having the right skills and knowledge that lets this process down, and MRS Training & Rescue is often asked to help at this stage by providing an expert consultant with knowledge and experience across all industries. This expert is often combined on site with a customer's process/engineering site health and safety professional, or other person with expert knowledge of what goes on inside the areas that are being assessed as confined space or not, and at what hazard level (low, medium, or high) they pose a risk. Looking at each specified risk and giving it a risk rating using a risk matrix specifically designed for assessing confined space risk level ensures the confined spaces are correctly categorised into low, medium or high.

Other factors that must always be considered are summarised below, but for more detail it is worth reviewing the Approved Code of Practice for Safe Work in Confined Spaces (L101).

Factors to be assessed:

- The general condition of the confined space, considering the previous contents, any residues that are likely to remain or any contamination that may be present within the confined space. Contamination may come from a wide range of sources which could include other operations taking place on site, operations taking place remote from the site, mains gas lines, surrounding land, soil or strata.
- The ability for the space to become oxygen enriched (for example, introducing sources of oxygen such as oxy acetylene cutting) which will increase levels of flammability. Alternatively, the ability of the space to become oxygen deficient (for example the oxidation (rusting) of steel as part of the work process), which if not recognised can lead to unconsciousness and in extreme cases death.
- The physical dimensions, and how the layout may create isolated pockets that require consideration be given to the use of ventilation systems.
- Hazards that work introduces, these hazards could be directly from the work being undertaken, or alternatively the conditions may become hazardous when the work is done (for example agitating residues). Hazards that may be introduced into a workplace could include cleaning chemicals, sources of ignition, flammable gases, the introduction of flammable materials, and tools and equipment.
- Hazards from outside of the space could be inadvertently introduced, and therefore consideration should be given to the need to isolate to prevent danger from substances such as liquids, gases, steam, water and raw materials. When considering isolation, it is not only electricity, but other energy sources, including stored energy sources that should be considered.

Regulation 4 of the Confined Spaces Regulations 1997 requires that when work activity requires entry into a confined space, then the duty holder has a responsibility for developing a safe system of work. The guidance to those regulations (Guidance Note 82) identifies a series of precautions that need to be included. In addition to the factors previously identified, it also requires that any precautions need to include supervision of the work taking place, the competence of those involved in planning, managing, and working in the confined space.



“It’s vital we get the message across that control measures are there to bring the risk to an acceptable level. We are here to pass on our years of experience to managers, to guide them in understanding the hazards, the risk they create and to explain to them why they need the control measures in place and the impact these will have in keeping people safe.”

Stuart Hault, CEO, MRS Training & Rescue.

What happens if we get it wrong?

A failure to adequately identify the hazards, assess the risks, and put in place suitable controls does not mean that something is going to happen; sometimes you are lucky, and you get away with it. Sometimes, despite having completed a thorough assessment and having put in place stringent controls, something still happens. Therefore, as part of doing any work in confined spaces Regulation 5 of the Confined Spaces Regulations 1997 require that we put in place suitable mitigation measures (*“No person at work shall enter or carry out work in a confined space unless there have been prepared in respect of that confined space suitable and sufficient arrangements for the rescue of persons in the event of an emergency, whether or not arising out of a specified risk.”*)

These measures include the requirement for emergency arrangements. The type of measures that you introduce will be dependent on the complexity of the confined space operation, but as a minimum should consider the requirements for:

- Self-escape; this requires a means to raise the alarm, and in some cases the ability to correctly operate and wear escape breathing apparatus.
- Rescue; these arrangements should be available on site, and have equipment readily available to conduct a rescue under a range of foreseeable scenarios. Rescue arrangements that rely on the use of local emergency services would not generally be deemed adequate.

Where the work activities in confined spaces require the presence of a dedicated rescue team, it should be ready to deploy immediately should an emergency arise. Where your assessment of the risk identifies a need to employ an emergency response team, you should check that they are trained to the standards set out in the Emergency Rescue and Recovery of Casualties from Confined Spaces National Occupational Standards, which includes:

- Using rescue equipment
- Wearing suitable breathing apparatus for rescue work (not the escape sets you may wear)
- Administering advanced first aid, such as the provision of oxygen and pain relief
- Dealing with casualties
- Transporting/extracting casualties from confined spaces, possibly using specialist rescue stretchers.

You may also want to ask what the process is for updating and maintaining the competencies.

MRS Training & Rescue is a leading authority in confined space technical rescue for high-risk situations worldwide. Our operatives have first-hand experience of working in difficult conditions, along with specialist equipment, knowledge and experience. Our [long history](#) of responding to emergencies in the UK mining industry underpins our confined space services today. You can read more about the skills and competencies of our rescue teams [here](#).

Worryingly, many employers don't even have a comprehensive rescue plan or a dedicated rescue team, opting instead to rely on the emergency services – an impractical solution and contrary to the guidance notes under Regulation 5 of the Confined Spaces Regulations.

What is competence and why do I need to consider it?

The HSE defines competence as: *"The ability to undertake responsibilities and perform activities to a recognised standard on a regular basis. It is a combination of skills, experience and knowledge."*

Regulation 4 of the Confined Spaces Regulations states: *"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, you should check 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."*

You can read more about the key principles of competence on the HSE's website [here](#).

A key control when carrying out work in a confined space is to ensure that you have competent people available. MRS Training & Rescue has been involved in developing competent operators to work in hazardous operations for over 120 years. In the final sections of this report the aim is to provide some guidance on identifying and delivering the right level of competence to your teams.

Training routes explained

As an employer, one of the things that you need to understand and question when considering training is that the training standards must be appropriate to the task, and to the individual's roles and responsibilities, so that work can be carried out safely. Making informed decisions about what training you require relies on following practical steps and asking the right questions. There are different training options available, and safety should always be the top priority – so buyer beware.

There's a big difference between being trained and being competent. On the one hand you're raising awareness of standards. On the other, you have the chance to be fully accredited in line with nationally recognised standards. The latter puts a member of staff in the best possible position by providing a direct opportunity for them to learn and test their new-found skills in a safe and controlled environment.

When booking training it is important to understand if you are getting a regulated course, an accredited course or something the training organisation has created itself.

1. A **regulated qualification** follows the National Occupational Standards (NOS) and is regulated by an external body. This means that there is a level of quality assurance built in with the training organisations, and the trainers being subjected to regular audits by the awarding body. You can have a level of certainty that the training and the award are to a recognised standard.
2. An **accredited qualification** is where the training provider has worked with an awarding body to produce qualifications that comply with the relevant occupational standard. However, there is no process to check whether those standards are being applied in the training, or whether the trainers are up to the required standards. So, you need to understand what quality assurance there is for you and your team.
3. Training that has been developed by an organisation but is neither regulated nor accredited. This is not necessarily a negative, and many organisations work with training providers to develop training which is bespoke to their sites, the hazards that they have identified and the safe system of work that they have put in place. The onus for ensuring that it meets the appropriate standard remains with you the employer.

Training is just one of the essential building blocks of competence. Utilising training that is based on recognised standards is a very effective way of ensuring that the training element of competency is a much larger, and robust building block.

Training is expensive both in terms of cost and time, it is therefore essential that you understand the level of training that you require, and you get the certificate that you need to enter the site and complete the work. The final section of this report aims to provide some assistance in selecting the right training course for your needs.

Training courses explained

Following the introduction of the Confined Spaces Regulations in 1997, the number of accidents, injuries and fatalities did not significantly decrease. This was traced to the quality of training being provided. To improve this situation, a working group was set up by the Sector Skills Council, comprising representatives from the HSE, industry, training organisations and award bodies. [Andrew Watson, Special Technical Advisor at MRS Training & Rescue](#) was a member of the group. The group established a set of National Occupational Standards for confined space entry and rescue, setting out what people should know and do to do their jobs safely and efficiently. Built into every National Occupational Standard was the principle that a worker should be competent to be productive, healthy and safe.

The award organisations then created qualifications covering:

- Low-risk entries
- Medium-risk entries
- High-risk entries
- Emergency rescue and recovery of casualties
- Top person duties
- Managing confined spaces

More information on low, medium and high-risk spaces can be found [here](#).



“It’s important to remember that the principles of keeping people safe remain the same regardless of sector. The differences lie in how you keep them safe according to the industry they’re working in – and whether they’re trained or competent.”

Andrew Watson, Special Technical Advisor, an expert in confined space working and a member of the Sector Skills Working Group.

MRS Training & Rescue – experts you can trust

As an employer, you are responsible for ensuring your people are not only properly trained but are competent. But for those without a deep knowledge of all the rules and regulations, ensuring you get the right training for the right people can be complex. Trusting a provider that delivers the best training for your needs through accredited courses can give you the confidence and peace of mind that your people know what to do and have the competence to keep themselves and their colleagues safe.

MRS Training & Rescue is a standard-bearer for safety, with a passion and focus on getting it right. We are the authority in confined space training and assessment and our long history of responding to emergencies in the UK mining industry underpins our services today.

All our operators have many years of real-life skills and abilities learned from working in hazardous environments and they continue to work on the front line in high-risk situations, living and breathing the circumstances that we train you for. We provide training expertise, full transparency on training standards, guidance and consultancy support to ensure you get the right training for your needs.

To help you make informed decisions on the equipment you need and the most relevant training, MRS Training & Rescue has established a Safe Access & Control of Confined Spaces (SACCS) consultancy service. Our confined space specialists will review relevant documents and visit your site to help identify and categorise confined spaces based on the recognised standards and risks. They'll also guide you on the equipment, training, and competencies for people entering or supporting the work. At the end, we'll provide you with a report to help you control and plan confined space work. Our report can form the basis of a safe system of work.

With a focus on supporting companies to keep their people safe, MRS Training & Rescue takes the time to understand your specific needs.

For more support, guidance and advice to simplify the complexities of confined space training, and to ensure you get the right training for your needs, email MRS Training & Rescue at scotlandnorth@mrsl.co.uk or call +44 (0)1224 702182.

We did everything we could. Did you?

www.mrsl.co.uk

