

# City & Guilds Qualifications in Working in Confined Spaces 6160

April 2022 v4

**Resource Pack for Skills Tests**  
**For Centres / Training Providers / Employers**

Version and date	Change detail	Section
v1 March 2021	Document created	
v2 April 2021	Updated instructions about pre-requisites	Pages 17, 21 & 23
v3 August 2021	Updated instructions about pre-requisites for 6160-05	Page 17
v4 March 2022	Removed reference to personal winch from Assessment 011	Page 8
	Amended image labels for Assessment 012	Pages 9 & 10
	Amended title for Assessment 014 to include 'high risk'	Page 14
	Added instructions for Assessment 019	Page 20
	Amended Guidance on Risk Assessment (changed 'unknown risks' to 'known risks')	Page 21

## Contents

<b>1</b>	<b>Introduction</b>	<b>4</b>
	What is in this document?	4
	Who is this document for?	4
	Equipment Resources	5
	The Risk Based Approach	6
	Assessment 011	7
	Assessment 012	9
	Assessment 013	12
	Assessment 014	14
	Assessment 015	15
	Assessment 016	16
	Assessment 017	17
	Assessment 018	18
	Assessment 019	20
	Guidance on Risk Assessment	21

# 1 Introduction

## What is in this document?

This document contains guidance for approved Centres delivering the 6160 Confined Spaces Qualifications.

It provides guidance on the characteristics of low, medium and high risk confined spaces in all contexts and the approximate conditions that identify them as such.

It also contains guidance on the conditions, under which respective assessments must be carried out and equipment resources required for assessment purposes. For standardisation of assessment the NCs are referenced.

This document **must** be used in conjunction with the following City & Guilds Confined Spaces documents which are available on the City and Guilds website [www.cityandguilds.com](http://www.cityandguilds.com):

- Qualification Handbook
- Assessment Packs

## Who is this document for?

This is for use by the Centre/training provider/employer delivering Confined Spaces qualifications 6160.

## 6160 Qualifications for Working in Confined Spaces

### Equipment Resources

It is the responsibility of centres to ensure that where applicable, all equipment meets the appropriate EN specifications. Where EN standards do not exist, equipment should be suitable for purpose and approved by the External Quality Assurer (EQA).

Learners undertaking the 6160 Confined Spaces Qualifications should have access to the following PPE and equipment:

#### Overalls

- Cotton or cotton mix (non-static generating) overalls with close fitting cuffs, or disposable overalls of a type meeting the requirements of the risk assessment
- Waterproof overalls

#### Gloves and gauntlets

- Industrial gloves and gauntlets in rubber, PVC or similar, to the relevant EN standard

#### Helmets

- Safety helmets to relevant EN standard (to accept cap lamps if required, usually peakless)

#### Footwear

- Safety soled and safety toecap with non-sparking profiled soles

#### Portable gas monitoring equipment

- A selection of monitors with calibration certificates. All should comply with current legislation and standards for electrical equipment in potentially explosive atmospheres
- There should be at least **three** channel monitors, ie monitoring high/low oxygen levels; flammable gas based upon Methane LEL, and Hydrogen Sulphide, in accordance with the risk assessment
- For **four** or **five** channel instruments the extra channel should be Carbon Monoxide and/or Chlorine or a sensor appropriate to the business and candidate usage

#### Hand lamps, torches and cap lamps

- All must be constructed and certificated to comply with current legislation and standards on equipment in potentially explosive atmospheres
- Spare bulbs, batteries and charging units should be available

## Ropes

- A selection of ropes for tying off and lowering of tools, gas monitors or other equipment, 6-8 mm diameter is sufficient
- Preferably of a braided construction to prevent spinning
- They do not need to be safety certificated

## Warning barriers and warning signs

- These should represent the risk assessment required under Roads and Streetworks legislation and protect bystanders from risks involved in the assessment exercise

## Manholes

- Metal or plastic mesh inserts to prevent tools and debris falling into open manhole
- Manhole cover lifting devices including a selection of:
  - Long and short handle manual lift keys
  - Long handled lever types on castors
  - Hydraulic lifters

## Equipment register

- The register must contain all safety certificates, initial testing, re-testing and re-calibration. All maintenance and any failure of equipment and its repair must be documented
- A routine diary of testing and calibration must be maintained, or the particular equipment must be quarantined to prevent its use in line with PUWER
- New equipment purchases necessitated by changes in practice, legislation or business needs must be added to the Equipment Register

## First aid support for the centre

- Access to a trained First Aider
- Portable first aid kits as required by the First Aid at Work Regulations

## The Risk Based Approach

According to regulation, the two defining features of a confined space are as follows

- the space is enclosed
- the presence of a specified risk.

On identifying a confined space, a person(s) must undertake a risk assessment to determine the nature of specified hazards that could be encountered and the probability of encountering them. This will then lead to the classification of the confined space at low, medium or high risk and trigger the use of equipment and procedures appropriate to the confined space environment.

**Note:** All diagrams below courtesy of Water UK's Occasional Guidance Note (OGN)  
<https://www.water.org.uk/>

## Level 2 Working in low risk confined spaces

### Assessment 011

A low risk confined space exists where there is easy entry/exit and natural ventilation. Candidates will check the atmosphere by introducing a gas monitor into the confined space. This will **not** alarm if it is safe to enter.

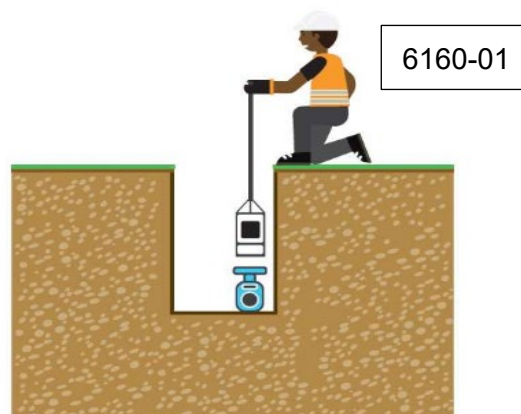
If the gas monitor alarm is triggered prior to entry, candidates must **not** enter and must notify an appropriate person immediately.

If a gas monitor alarm is triggered while working in a low risk confined space, candidates must exit the confined space immediately and notify the relevant person.

Low risk confined spaces could be associated with lone working, requiring the application of appropriate procedures.

This qualification **must** be assessed in a low risk environment. In order to maintain standardisation in assessment, please ensure that a confined space is used that meets the water industry NC1 setting.

**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, eg meter pits, valve chambers, booster-pumping stations, PRV chambers.



#### Additional low risk NC1 assessment characteristics:

- Not deeper than 3 metres, with an unobstructed vertical lift.
- Straight ladder into a dark chamber.
- During completion of the task, Centres should simulate real life scenarios to assess candidates' ability to solve problems and deal with incidents whilst in the confined space.
- Candidates should have access to fall arrest and retrieval equipment.

### **Equipment requirements for working in low risk confined spaces**

Safety harnesses and fall arrest systems as required by the Working at Height Regulations to appropriate specification:

- Full body harness with safety certification
- Energy absorbers with safety certification (optional)
- Fall arrest systems with safety certification
- The equipment selected should reflect the industry areas in which candidates may be working.



## Level 2 Working in medium risk confined spaces

### Assessment 012

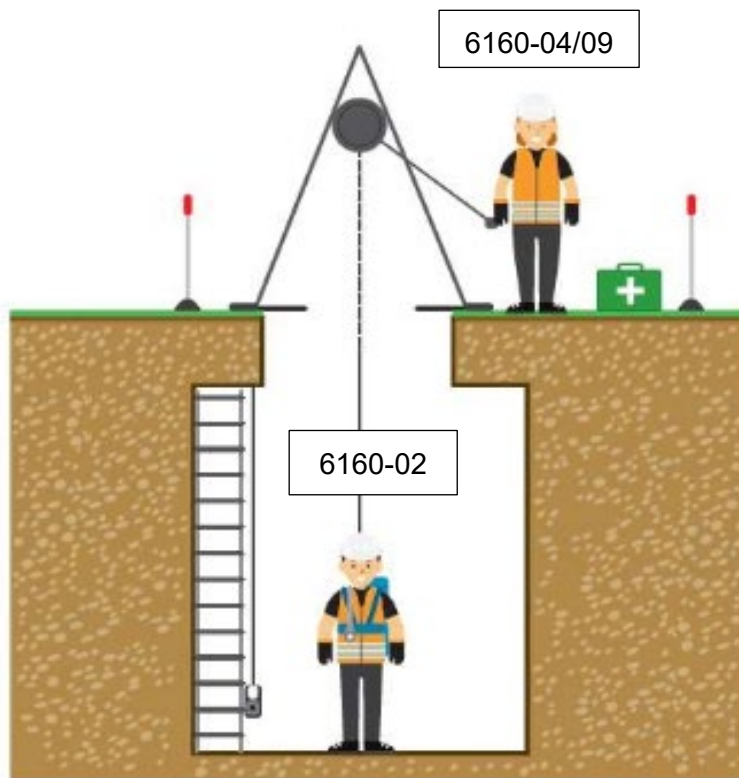
A medium risk confined space exists when there are access issues; a realistic expectation of encountering a specified risk; possible introduction of specified risks during the work activity.

If the gas monitor alarm is triggered prior to entry, candidates must **not** enter and must notify an appropriate person immediately.

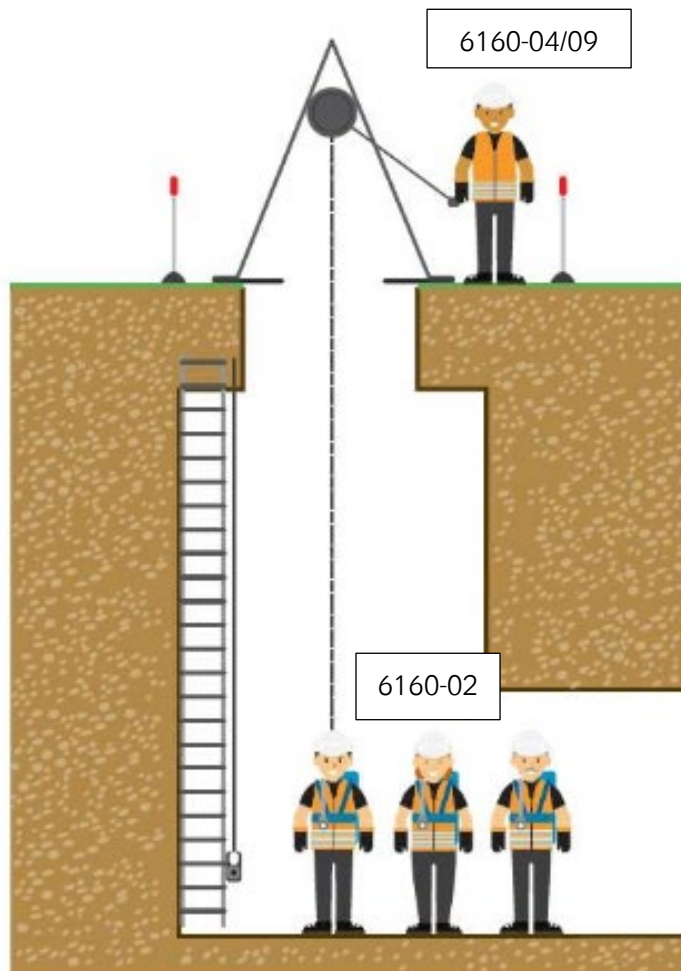
As this is a medium risk environment, candidates **must** enter the confined space with escape respiratory protective equipment (RPE).

Upon encountering a specified hazard, candidates must don the escape RPE immediately and exit.

**NC2** Vertical direct unobstructed access with continuous attachment to a personnel winch or similar mechanical rescue device.



**NC3** When it is not possible to have persons permanently attached to a safety line. Usually, it will be a team entry which moves away from the entry point, eg person 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 but on an unobstructed horizontal plane.



This qualification **must** be assessed in a medium risk environment. For standardisation, please ensure that a confined space is used that meets the water industry NC3 setting.

**Additional medium risk NC3 assessment characteristics:**

- Deeper than 3 meters in one or two ladders but requiring fall arrest.
- Dark, but any real hazard due to access arrangements clearly visible when using portable lighting.
- Able to move a reasonable distance away from the access point, **estimated at 30 meters**, giving a working team of **five** the opportunity to become spread out.
- The use of escape breathing apparatus should be considered necessary for all except the link person/bottom man (bottom of the ladder).

- During completion of the task, Centres should simulate real life scenarios to assess candidates' ability to solve problems and deal with incidents whilst in the confined space.
- All candidates must be assessed using escape breathing apparatus (open/closed circuit).

## **Equipment Requirements for Working in Medium Risk Confined Spaces**

### **Respiratory Protective Equipment (RPE)**

- Self-contained compressed air positive pressure escape breathing apparatus, ten minutes nominal duration. The equipment selected should reflect the industry areas in which candidates may be working. Assessment may be carried out using either facemask type or hood type equipment. (Spare cylinders to maintain training exercises will be required).
- Self-contained closed circuit oxygen re-breather (chemical) escape breathing apparatus. Training sets should be purchased; these do not contain oxygen-generating chemicals.
- A supply of appropriate disinfecting and cleaning cloths should be available for facemask cleansing before and after use.

### **Air horns (with disposable compressed air supply)**

- Portable air horns, powered by disposable compressed air/inert gas, for signalling purposes.
- Radios (intrinsically safe preferred).
- Other types of signalling devices can be used.

## Level 2 Working in High Risk Confined Spaces

### Assessment 013

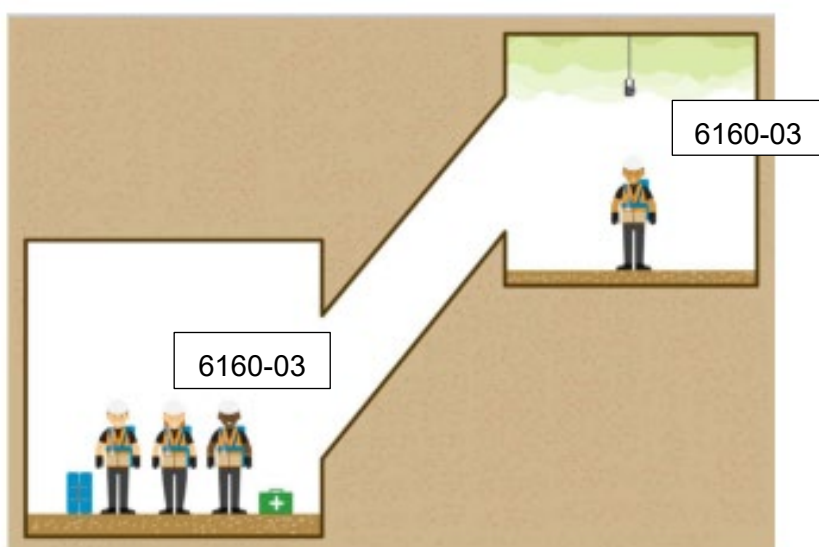
A high risk confined space exists when there is a specified hazard that cannot be controlled or eliminated. There may or may not be access issues and candidates are expected to carry out their work activity in the presence of this specified risk.

An exit from this confined space is triggered when pre-arranged safety margins are breached.

As this is a high-risk environment, candidates **must** enter with appropriate respiratory protective equipment (RPE) and wear it throughout the operation.

This qualification must be assessed in a high risk environment. For standardisation, please ensure that a confined space is used that meets the water industry NC4 or NCX setting.

NC4/NCX complex access and egress that do not meet any of the classifications above or involving complex operations which introduce additional risks and require specific controls and rescue arrangements, eg mechanical hazards, physical complexity of system introduced hazards, enhanced specific intrinsic hazards.



#### Additional high risk assessment characteristics:

- Deeper than 3 meters in one or two ladders but requiring fall arrest.
- Dark, but any real hazard due to access arrangements clearly visible when using portable lighting.
- Able to move a reasonable distance away from the access point, **estimated at 30 meters**, giving a working team of **five** the opportunity to become spread out.
- Entry should be undertaken using full working self-contained breathing apparatus or airlines.
- During completion of the task, Centres should simulate real life scenarios to

assess candidates' ability to solve problems and deal with incidents whilst in the confined space. Through simulation, candidates should feel as if they are in the midst of a real hazardous atmosphere. Under no circumstances must they be put at risk through the use of an actual real hazardous atmosphere.

## **Equipment Requirements for Working in High Risk Confined Spaces**

### **Additional gas testing equipment**

- Carbon monoxide, measuring in the range specified in the current legislation.
- Where appropriate, additional gas detection equipment such as: Chlorine, Cyanide, Sulphur Dioxide and Hydrogen Sulphide.

### **Selection of chains, identity tags and padlocks for isolation and locking off purposes**

- Tags should be numbered, capable of taking multiple padlocks.
- No padlock should have more than three dedicated keys.

### **Air Movers, ventilation equipment**

- Risk assessments may require exhaust ventilation or forced air ventilation as a control measure.
- Equipment demonstrated must have a 'safe' power source, ie comply with electrical equipment standards in potentially explosive atmospheres or if powered by an internal combustion engine, it must be outside of the confined space and its own exhaust led away to some safe emission point.

### **Breathing apparatus**

- Self-contained breathing apparatus (SCBA) positive pressure set with a nominal duration of 30 minutes. This equipment should reflect the conditions and the risk in which the candidates will work in their respective industry areas. Spare cylinders will be required to maintain competency while undertaking training exercises.
- Air-line or trolley set compressed air breathing apparatus complete with spare cylinders, nominal duration one hour complying appropriate specification.

### **Chemical resistant (Gas Tight Suits) (Optional)**

- They may be self-contained enclosing the worker and their breathing apparatus or of a type, which has a secure umbilicus with an airline protecting the user's breathing.
- Breathing apparatus usage – BA control board.

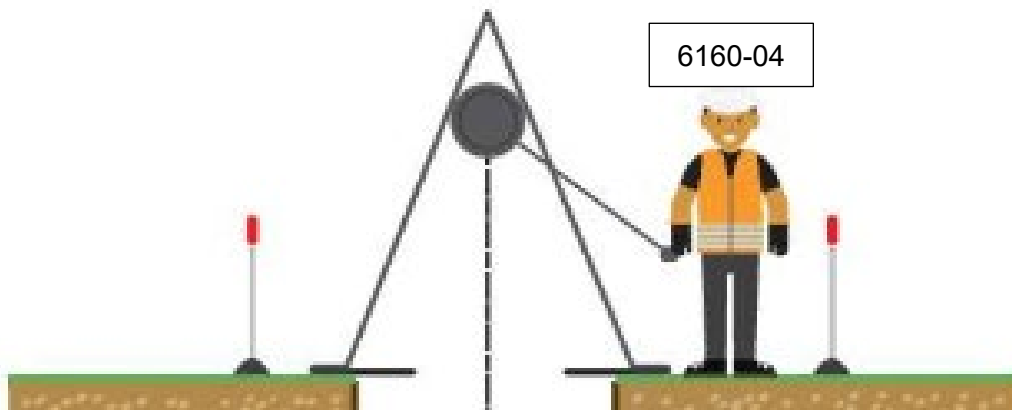
## Level 3 Control Entry and Arrangements for Working in Confined Spaces (High Risk)

### Assessment 014

This qualification is about controlling the entry and exit of others into confined spaces and also the arrangements that need to be in place to keep them safe while they are there.

This qualification does not require entry into confined spaces.

It includes controlling the pre-entry procedures and entry into and out of confined spaces, maintaining communications with team members who are in confined spaces, monitoring equipment readings, raising the alarm and handing over to rescue teams during emergency situations.



To meet the full requirements of the National Occupational Standards underpinning the qualification the assessment **must** take place in a high-risk context. Therefore, centres **must** consult the requirements for the high-risk assessment.

Where working with larger groups it may be necessary to rotate the roles within a group entry to ensure all candidates have the opportunity to demonstrate the necessary criteria.

## Level 3 Supervising Teams Undertaking Work in Confined Spaces

### Assessment 015

This qualification is about the duties of a supervisor of confined spaces. A supervisor will most likely be responsible for multiple teams working in confined spaces at any one time.

It includes putting together work teams, planning pre-entry procedures, making sure all the safety and emergency equipment is available and checking that team members working in confined spaces are following safety procedures during normal working. It also includes responding to and taking over direct supervision of confined spaces during emergency situations in conjunction with the rescue team controller if utilised.

**Important:** completion of this qualification requires a pre-requisite of 6160-02\* or 6160-03\*.



To meet the full requirements of the National Occupational Standards underpinning the qualification the assessment must take place in a medium- or high-risk context, depending on the pre-requisite qualification held by the learner. Therefore, centres must consult the requirements for the medium- or high-risk assessment.

\* Equivalent qualifications must cover the same content as the current National Occupational Standards and be confirmed by the centre. The centre must submit a Centre Update Form (CUF) to their City & Guilds Quality Team to advise of the equivalent qualifications.

Centres must always ensure that the learner has achieved the qualification and retained the pre-requisite knowledge before they enrol on a programme. The EQA may request to see evidence of this during their next routine quality activity. Evidence should be certified copies of certificates, supported by notes from a professional discussion or a 'skills scan' that has been reviewed by a qualified assessor.

Where working with larger groups it may be necessary to rotate the roles within a group entry to ensure all candidates have the opportunity to demonstrate the necessary criteria.

## Level 4 Plan, Manage and Review Legislative and Safety Compliance for Work in Confined Spaces

### Assessment 016

This qualification is about managing legislative and safety compliance for work in confined spaces.

It involves planning, organising and managing work safely in confined spaces including legislative roles and responsibilities, health and safety considerations and equipment requirements.

It includes:

- applying relevant legislative and industry confined spaces requirements
- developing risk assessments
- determining suitable control measures
- developing safe systems of work
- establishing effective procedures for using permits to work
- developing effective emergency arrangements
- implementing and maintaining effective arrangements for document storage, review and audit.

This qualification is for managers that are responsible for organising, planning and managing legislative and safety compliance for work in confined spaces. The manager may or may not supervise the actual job.



Candidates are required to produce a portfolio of evidence.

The portfolio is a collection of workplace evidence. It efficiently demonstrates the candidate's performance in relation to the specified criteria.

Further information relating to the collection and preparation of portfolio evidence can be found in the 6160-06 Assessment pack available on the City & Guilds website

**[www.cityandguilds.com](http://www.cityandguilds.com)**



## Level 3 Direct Emergency rescue and recovery of casualties from confined spaces

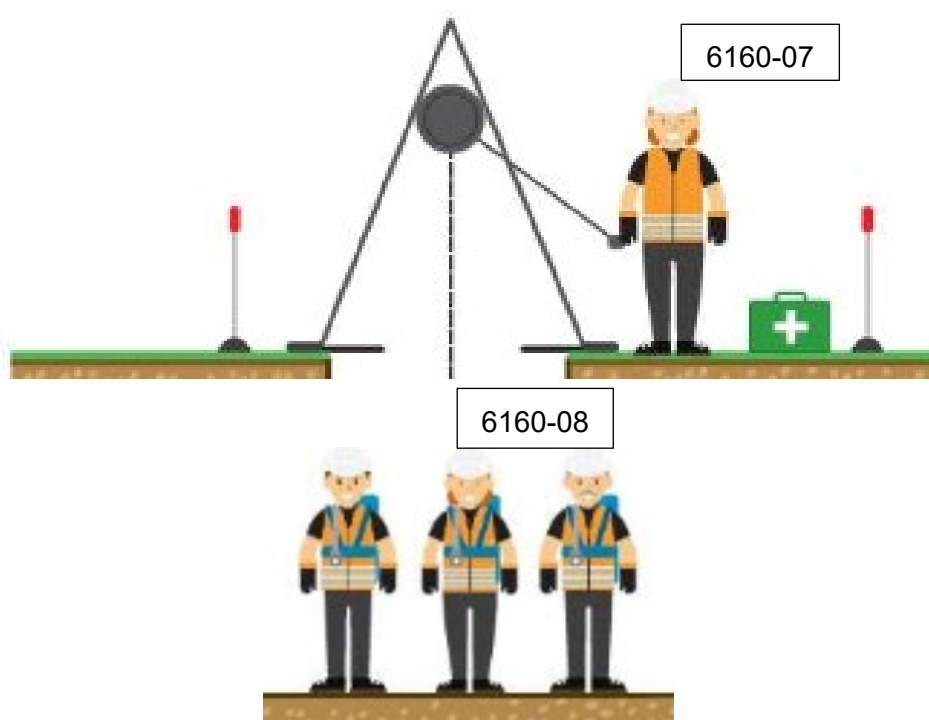
### Assessment 017

This qualification is about planning and preparing for emergency operations, mobilising rescue teams when emergencies arise, directing and monitoring emergency rescue activities, and reporting and securing sites after incidents and emergencies.

The emergency team will need to be available when the risk assessment for a confined space determines that it is necessary. An emergency team is a dedicated team and may be an in-house team, specialist contractors or the emergency services by prior arrangement.

During completion of the task, Centres should simulate real life scenarios to assess candidates' ability to solve problems and deal with incidents and emergencies.

Important: completion of this qualification requires a pre-requisite of 6160-08\*.



\* Equivalent qualifications **must** cover the same content as the current National Occupational Standards and be confirmed by the centre. The centre **must** submit a Centre Update Form (CUF) to their City & Guilds Quality Team to advise of the equivalent qualifications.

Centres must always ensure that the learner has achieved the qualification and retained the pre-requisite knowledge before they enrol on a programme. The EQA may request to see evidence of this during their next routine quality activity. Evidence should be certified copies of certificates, supported by notes from a professional discussion or a 'skills scan' that has been reviewed by a qualified assessor.

Where working with larger groups it may be necessary to rotate the roles within a group entry to ensure all candidates have the opportunity to demonstrate the necessary criteria.

## Level 3 Working as a Member of a Rescue and Recovery Team in Confined Spaces

### Assessment 018

This qualification is about working in confined spaces as a member of a rescue and recovery team. An emergency team will need to be available when the risk assessment for a confined space determines that it is necessary. An emergency team is a dedicated team and may be an in-house team, specialist contractors or the emergency services by prior arrangement.

This qualification includes preparing to carry out emergency activities, entering and exiting confined spaces safely, using emergency equipment, casualty recovery and handling devices in accordance with manufacturers' specifications, rescuing and recovering casualties, following procedures and working safely.

During completion of the task, Centres should simulate real life scenarios to assess candidates' ability to solve problems and deal with incidents and emergencies whilst in the confined space

**Important:** completion of this qualification requires a pre-requisite of 6160-03\*.

6160-08



\* Equivalent qualifications **must** cover the same content as the current National Occupational Standards and be confirmed by the centre. The centre **must** submit a Centre Update Form (CUF) to their City & Guilds Quality Team to advise of the equivalent qualifications.

Centres must always ensure that the learner has achieved the qualification and retained the pre-requisite knowledge before they enrol on a programme. The EQA may request to see evidence of this during their next routine quality activity. Evidence should be certified copies of certificates, supported by notes from a professional discussion or a 'skills scan' that has been reviewed by a qualified assessor.

## **Equipment Requirements for Emergency Rescue and Recovery**

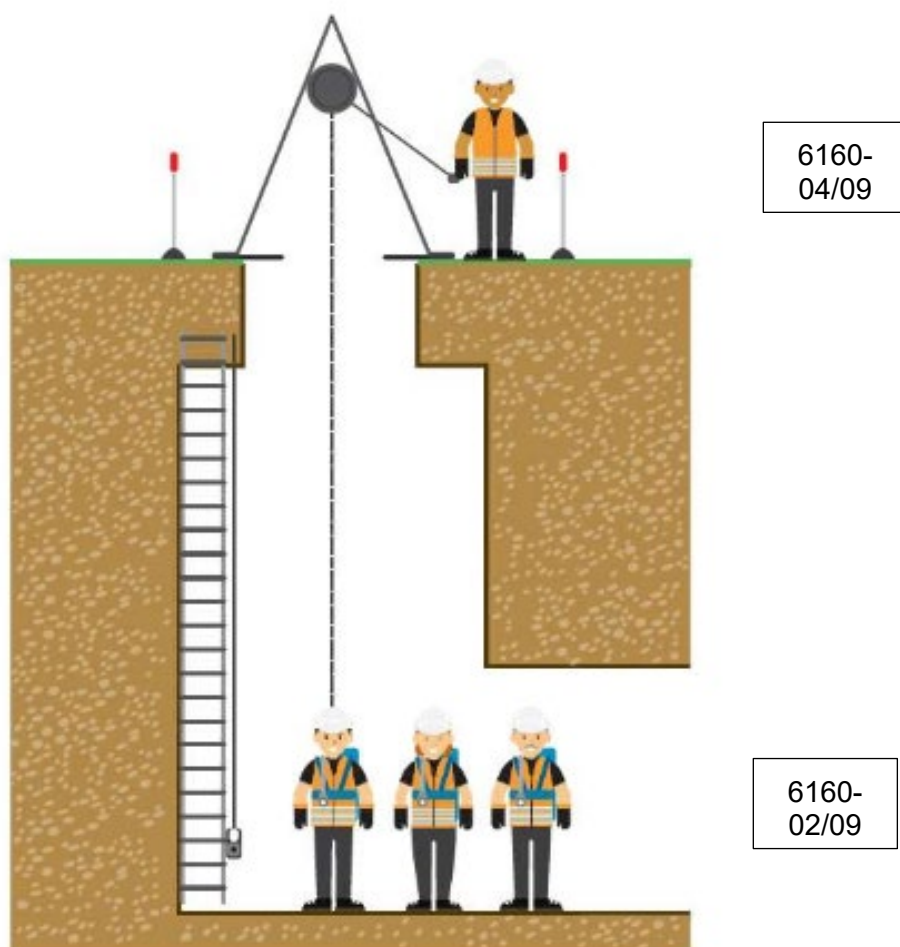
- Self-contained compressed air positive pressure demand breathing apparatus of nominal duration 30 minutes to appropriate specification. The equipment selected should reflect the industry areas in which candidates may be working. (Spare cylinders to maintain training exercises will be required)
- Air-line or trolley set compressed air breathing apparatus complete with spare cylinders, nominal duration one hour complying with appropriate specification.
- An artificial casualty, to be anatomically correct as reasonable for the exercise involved. This casualty should be in the region of 50-60kg. Risk assessments, including manual handling, for the practical exercises must include the handling of this “casualty”.
- Hand operated resuscitators.
- Oxygen assisted resuscitator.
- Static and portable first aid kits.
- Face shields for demonstrating rescue breaths.
- Resuscitation manikin plus extra face parts or disinfection equipment.
- Training versions of AEDs (automatic external defibrillator).

## Level 2 Entrant and Entry Controller for Confined Spaces (Medium Risk)

### Assessment 019

This qualification is about controlling the entry and exit into medium risk confined spaces and also the arrangements that need to be in place to keep them safe while they are there.

It includes controlling the pre-entry procedures and entry into and out of medium risk confined spaces, maintaining communications with team members who are in confined spaces, monitoring equipment readings, raising the alarm and initiating emergency arrangements.



To meet the full requirements of the National Occupational Standards underpinning the qualification the assessment **must** take place in a medium-risk context. Therefore, centres **must** consult the requirements for the medium-risk assessment.

In addition to the above, all conditions pertaining to 6160-02 will apply to all personnel (see pages 9-11).

Where working with larger groups it may be necessary to rotate the roles within a group entry to ensure all candidates have the opportunity to demonstrate the necessary criteria.

## Guidance on Risk Assessment

Throughout the qualifications' assessment criteria, reference is made to risk assessments which are carried out at different times whilst working on confined spaces. The following information gives clarity and guidance to centres.

### Generic Risk Assessment

Generic risk assessments cover common hazards for a task or activity. A generic risk assessment will often be used for similar activities or equipment across different sites, departments or companies. It can act as a risk assessment template, covering the types of hazards and risks that are usually present for the activity.

The idea behind generic risk assessment is to cut down on duplication of effort and paperwork. This type of risk assessment will consider the hazards for an activity in a single assessment, where that activity may be carried out across different areas of the workplace or different sites.

<https://www.haspod.com/blog/paperwork/types-of-risk-assessment>

### Site-Specific Risk Assessment

A site-specific risk assessment is a risk assessment that has been completed for a specific item of work that takes account of the site-location, environment, and people doing the work.

A site-specific risk assessment will do more than look at common hazards. It will also address the unusual hazards that might only apply to that specific situation, on that particular day. <https://www.haspod.com/blog/paperwork/types-of-risk-assessment>

### Point of Work Risk Assessment (POWRA)

A Point of Work Risk Assessment (POWRA) is a workplace risk assessment carried out prior to start of activity. It is used to identify those things, situations, processes and activities that may cause harm particularly to people. One completed POWRA form can apply to the whole team.

<https://public-library.safetyculture.io/products/point-of-work-risk-assessment-powra-0hy5g>

### Dynamic Risk Assessment

A dynamic risk assessment is a process of assessing risk in an on-the-spot situation. This type of risk assessment is often used to cope with unknown risks and handling uncertainty. It might be used by the emergency services, or care workers for example, who need to deal with developing and changing situations. These types of environments need to be continually assessed. If there are significant changes, is the original risk assessment still valid? Should you try to deal with the situation? Is it safe to continue?

It is not always possible to prepare for every risk or hazard. A written risk assessment should assess the level of 'known' risks. Where a certain element of dynamic risk analysis is required, workers need to have the skills and awareness to recognise and deal with danger.

<https://www.haspod.com/blog/paperwork/types-of-risk-assessment>

Every effort has been made to ensure that the information contained in this publication is true and correct at time of going to press. However, City & Guilds' products and services are subject to continuous development and improvement and the right is reserved to change products and services from time to time. City & Guilds cannot accept responsibility for any loss or damage arising from the use of information in this publication.

©2022 The City & Guilds of London Institute. All rights reserved. City & Guilds is a trademark of the City & Guilds of London Institute, a charity established to promote education and training registered in England & Wales (312832) and Scotland (SC039576).

**Giltspur House**  
**5-6 Giltspur Street**  
**London**  
**EC1A 9DE**  
**[www.cityandguilds.com](http://www.cityandguilds.com)**