

Emergency rescue and recovery of casualties from confined spaces (D/618/7101)

Level	3	CABWI Unit Ref	CSER3.1
Credit Value	2	Guided learning hours	20

Unit purpose and aim

The aim of this unit is to assess learners against the national standard carrying out emergency rescue and recovery of casualties from a realistic high risk confined space environment. The learner will show that they can:

- prepare to work safely under emergency conditions
- enter and exit confined spaces safely
- prepare and use appropriate respiratory protective equipment (RPE)
- use rescue equipment safely
- follow procedures
- deal with emergencies.

There is also a behavioural emphasis on the learner undertaking the assessment in an efficient and safe manner. The learner must demonstrate sufficient knowledge and understanding of emergency rescue and recovery of casualties from confined spaces, and must demonstrate the appropriate practical skills and knowledge, through a mix of practical observation and written assessment.

The unit is based on the National Occupational Standard EUSCS08 developed by Energy and Utility Skills and approved in May 2020.

Learning Outcome 1: Prepare to work safely in confined spaces under emergency conditions

Assessment criteria - *the learner can:*

- 1.1 arrange for all rescue equipment specified in the safe systems of work to be on site before work begins.
- 1.2 set up and test communications systems to make sure it is working properly before rescue and recovery begins.
- 1.3 confirm all team members know and understand their roles.
- 1.4 check all team members are in place with the appropriate PPE before entry begins.

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Learning Outcome 2: Enter and exit confined spaces safely

Assessment criteria – *the learner can:*

- 2.1 set up exclusion zones to prevent entry by unauthorised people.
- 2.2 Work in line with rescue plans for entry, exit and movement in the confined space category

Learning Outcome 3: Prepare and use appropriate safety equipment in accordance with manufacturers' specifications

Assessment criteria – *the learner can:*

- 3.1 adhere to all procedures regarding the carrying, fitting, adjustment and use of the safety and respiratory protective equipment.
- 3.2 confirm the suitability of the safety and respiratory protective equipment for the job.
- 3.3 carry out pre-use safety and user tests to confirm the safety and respiratory protective equipment and its fit comply with current legislation, manufacturers specifications and approved codes of practice.
- 3.4 examine safety, escape and emergency equipment including RPE prior to fitting and starting work.
- 3.5 resolve any problems with the safety, escape and emergency the respiratory protective equipment including RPE and report non-conformities.
- 3.6 fit and adjust the designated safety equipment in line with manufacturers' instructions
- 3.7 wear the designated respiratory protective equipment to carry out work.
- 3.8 continuously monitor safety equipment and respiratory protective equipment during operation and use.
- 3.9 carry out after use checks on safety escape and emergency equipment after a safe exit.
- 3.10 take steps to maintain or repair faulty respiratory protective equipment.
- 3.11 store respiratory protective equipment in designated storage ready for the next job.

Learning Outcome 4: Use rescue equipment safely and in accordance with manufacturer's instructions

Assessment criteria – *the learner can:*

- 4.1 confirm all equipment and tools are suitable for the job before using them.
- 4.2 confirm all personal protective equipment (PPE) is suitable and compatible with the respiratory protective equipment to be worn before using it.

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Learning Outcome 4: Use rescue equipment safely and in accordance with **manufacturer's instructions**

- 4.3 use the specified method to introduce safety, escape and emergency equipment and tools into the confined space.
- 4.4 recover and remove equipment and tools at appropriate times
- 4.5 follow manufacturers and employers instructions for use after checks, cleaning, disinfection, decontamination and storage.

Learning Outcome 5: Follow procedures and work safely

Assessment criteria - *the learner can:*

- 5.1 follow current, site-specific risk assessments and rescue plans for rescue and recovery work and maintain emergency procedures throughout the incident.
- 5.2 follow safe working procedures and manufacturers equipment instructions.
- 5.3 follow all employers instructions and procedures.
- 5.4 act immediately to remedy any unsafe activity, equipment and environmental conditions.
- 5.5 regularly monitor atmospheric conditions and respond to changes within the confined space.
- 5.6 control risks and respond to changing conditions which arise during working.
- 5.7 use PPE specified for the job.
- 5.8 communicate regularly with the work team at all stages of the rescue and recovery.
- 5.9 confirm emergency communication links are working and the team is ready for entry.
- 5.10 enter the confined space as prescribed for emergencies and maintain a safe means of escape.
- 5.11 recover casualties to safe locations in a way which minimises risk to yourself and does not cause further injury to the casualty.
- 5.12 make reports and complete all documentation and deposit them with the designated people.

Learning Outcome 6: Deal with emergencies

Assessment criteria - *the learner can:*

- 6.1 confirm the emergency arrangements, procedures and communications systems are in place before entry.

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Learning Outcome 6: Deal with emergencies

- 6.2 make the emergency arrangements known to all work team, support personnel, and off-site personnel.
- 6.3 get all the rescue equipment on site as specified in emergency procedures.
- 6.4 arrange for rescue equipment to be in place before allowing entry to confined space.
- 6.5 put emergency equipment, casualty recovery and handling devices in designated places.
- 6.6 start emergency procedures immediately on becoming aware of a dangerous situation.
- 6.7 use emergency equipment and apparatus in line with manufacturers' instructions
- 6.8 put on PPE in response to emergency incident and check other team members comply with its wear and use.
- 6.9 supervise use of emergency equipment.
- 6.10 recover casualty to a safe location.
- 6.11 assess and prioritise casualties in line with emergency procedures
- 6.12 recover casualties to surface in a way which minimises further injury.
- 6.13 record and report the emergency incident and its circumstances.
- 6.14 administer basic first aid to recovered surface casualty where appropriate
- 6.15 maintain emergency communications.
- 6.16 Give sufficient relevant information to emergency services when handing over casualties
- 6.17 Close down and make work area safe and secure the site for post-incident investigation.

Learning Outcome 7: Know how to carry out emergency rescue and recovery of casualties from confined spaces

Assessment criteria - *the learner can:*

- 7.1 describe responsibilities to comply with the main principles of health and safety and environmental legislation and regulations.
- 7.2 know which approved codes of practice and guidance apply for working safely in confined spaces.
- 7.3 know what types of spaces could become confined due to the presence of a specified risk
- 7.4 define hazardous situations and different types and categories of hazards.
- 7.5 know how emergency situations can arise in a confined space.
- 7.6 know about manufacturers' instructions relating to the use of safety, escape and emergency equipment and different types of RPE for working and escape purposes.
- 7.7 know how to fit and wear PPE.
- 7.8 know about legislation and approved codes of practice and guidelines for use of safety, escape and emergency equipment, tools, and different types of RPE.
- 7.9 know about the limitations for using safety, escape and emergency equipment
- 7.10 know about working as part of a team and the roles of different rescue team members

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Learning Outcome 7: Know how to carry out emergency rescue and recovery of casualties from confined spaces

- 7.11 know about roles and responsibilities for dealing with emergencies.
- 7.12 know how to deal with emergencies, incidents and near misses.
- 7.13 know how to assess and review risks and hazards
- 7.14 know about different types and categories of emergency situation.
- 7.15 know about the implications of drink and drugs policies.

Learning Outcome 8: Understand how to apply relevant industry standards for carrying out emergency rescue and recovery of casualties from confined spaces

Assessment criteria – *the learner can:*

- 8.1 know how to identify different classifications of confined spaces
- 8.2 understand the hazards, substances and situations associated with confined spaces
- 8.3 understand entry procedures for different types and classifications of confined spaces environments.
- 8.4 understand how to undertake dynamic assessment of risks and hazards.
- 8.5 understand procedures and methods of working suitable to the confined space classification and local conditions .
- 8.6 understand how to minimise the risks to an acceptable level for the rescue and recovery work to be carried out.
- 8.7 know how to monitor conditions and work activity.
- 8.8 know the decontamination procedures which should be followed
- 8.9 understand communications methods which are suitable for different sites and their conditions.
- 8.10 understand how to resolve problems speedily and with the designated personnel.
- 8.11 understand how to follow manufacturer's instructions for preparing and using equipment.
- 8.12 understand how to check equipment before and after use
- 8.13 understand methods and techniques for using and wearing PPE.
- 8.14 know the limitations and duration of different types of breathing apparatus used by rescue teams and work team members
- 8.15 know the manufacturers' instructions which relate to the inspection and use of safety, escape and emergency rescue equipment including RPE
- 8.16 state the uses of automated external defibrillators and oxygen therapy (resuscitator units) and when it is appropriate to use them
- 8.17 know how to ensure the content of the emergency incident kit is complete.

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Learning Outcome 8: Understand how to apply relevant industry standards for carrying out emergency rescue and recovery of casualties from confined spaces

- 8.18 know how to sources of information about incidents and emergencies including maps, technical drawings, monitoring equipment and reports from the top person
- 8.19 know the responsibilities of a rescue team and its individual members.
- 8.20 know the procedures for dealing with emergencies, incidents, near misses rescue and recovery
- 8.21 know the appropriate communications and reporting systems for emergency situations.
- 8.22 know how and where to site emergency equipment.
- 8.23 know how to use tally boards and incident logs for managing rescue operations
- 8.24 know how to plan for dealing with potential fatalities.
- 8.25 know the role of the emergency team in administering first aid and when they should do so.
- 8.26 understand how to prepare for and deal with weather conditions.
- 8.27 understand how to maintain site integrity for investigations following emergency and rescue situations.

Terms and Definitions

Some terms, used in the assessment criteria, cover a range of situations, as follows:

1. safe systems of work – the learner must be handed a safe system of work and emergency arrangements, and must show that they have interpreted the requirements of both items.
2. Rescue equipment may include:
 - (a) communication devices
 - (b) breathing apparatus
 - (c) resuscitation equipment
 - (d) rescue stretcher
 - (e) lifelines
 - (f) first aid equipment
 - (g) splints
 - (h) neck collar
 - (i) portable lighting
 - (j) chemical suits.

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3. Communications systems may include:
 - (a) mobile phone
 - (b) radio
 - (c) air horns
 - (d) whistles
 - (e) chalk
 - (f) directional/warning signs
 - (g) associated organisational devised code(s) of signals
 - (h) emergency contact lists.
4. Team - learners undertaking this assessment will be part of a rescue team. They must show awareness of other rescue team members and be clear in their roles. Each learner must be given the opportunity during the practical assessment to show that they are interacting and confirming their own and other rescue team members' understanding of their roles prior to the start of the confined space operation.
5. Personal protective equipment (PPE) should include:
 - (a) overalls
 - (b) gloves/gauntlets
 - (c) safety helmets
 - (d) footwear
 - (e) barrier cream
 - (f) safety harness
 - (g) self-contained open circuit breathing apparatus.The learner must also confirm that the PPE they are using is compatible with the respiratory protective equipment being used.
6. Procedures for entering and exiting confined spaces can include:
 - (a) safety awareness
 - (b) access equipment
 - (c) risk assessments
 - (d) atmospheric conditions.
7. Suitability - in confirming the suitability of RPE for the operation, the learner must show that they consider the environment and working times likely to be encountered. They must also be familiar with the RPE selected.

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8. The types of respiratory protective equipment (RPE) can include compressed air line, air trolley and other appropriate types.
9. Pre-use safety and user tests - the learner must show that:
 - (a) they confirm that all test and maintenance certificates are available and in order
 - (b) all checks have been carried out according to manufacturers' instructions, including appropriate time limits for the RPE.
10. Problems - the learner must be given the opportunity during the practical observation to show that they can resolve problems.
11. Fit and wear - before fitting the RPE, the learner must show that they are aware of the specified time limits of it, as laid down by the manufacturer.
12. Monitor - during the observed assessment, the learner must demonstrate without prompting that they monitor the RPE continuously.
13. After-use checks must be in accordance with manufacturers' instructions.
14. Equipment and tools (including rescue equipment) - the learner must demonstrate that they confirm equipment and tools are suitable for the operation and appropriate for the setting. The equipment and tools covered must encompass a significant proportion of the following:
 - (a) portable gas monitor
 - (b) access equipment
 - (c) safety/rescue harness
 - (d) torch
 - (e) portable electric lamp
 - (f) communication devices
 - (g) respiratory protective equipment (RPE)
 - (h) lifelines
 - (i) fall arrest equipment
 - (j) first aid equipment (including resuscitation)
 - (k) portable lighting
 - (l) chemical suits
 - (m) entry/exit logs
 - (n) portable/fixed ventilation equipment
 - (o) rescue stretcher

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- (p) splints
 - (q) neck collar.
15. Personal protective equipment covers as a minimum:
- (a) overalls
 - (b) gloves / gauntlets
 - (c) safety helmets
 - (d) footwear
 - (e) safety harness
 - (f) compatibility of personal protective equipment with respiratory protective equipment.
16. The specified method will ensure that equipment and tools are:
- (a) introduced into the confined space safely
 - (b) used without danger to individuals at work
 - (c) used without damage to the tools and equipment.
17. Emergency procedures - the learner must be given the opportunity to show that they are following emergency procedures, covering as appropriate:
- (a) wearing times
 - (b) signals
 - (c) direction markers
 - (d) fencing off
 - (e) environmental monitoring
 - (f) unsuitable conditions
 - (g) visibility.
- The learner is not expected to design emergency arrangements or procedures. These must be drawn up before the assessment and provided to the learner at the appropriate time.
18. Act immediately - the learner must be given the opportunity during the practical assessment to show that they take the following action to resolve a problem that arises during the operation:
- (a) identify the problem
 - (b) implement suitable control measures where possible
 - (c) report the problem.
- The problems simulated should relate to breathing apparatus, ancillary equipment and conditions encountered within the confined space during the operation.*

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19. Monitor atmospheric conditions – the learner must show during the assessment and without prompting by the assessor that they:
- (a) monitor atmospheric conditions in the confined space
 - (b) interpret and act upon information obtained from relevant monitor(s).
- The learner must also show that they comply with the manufacturers' instructions for using the gas monitor. This can also extend to temperature, dust and depth monitoring equipment.
20. Control risks – the learner must be given the opportunity to show during the practical assessment that they can control risks. The evidence can be generated using a practical simulation, which may relate to the following types of hazards:
- (a) oxygen deficiency
 - (b) explosive atmospheres
 - (c) toxic atmospheres
 - (d) inrush of liquids/free flowing solids
 - (e) extremes of temperature
 - (f) diseases
 - (g) manual handling.
21. Environmental readings – the learner must be given the opportunity to show, without prompting, that they regularly record environmental readings. Simulation of a reading should be used, so that the learner is forced to respond appropriately by altering their work activity. Environmental readings can come from:
- (a) gas monitors
 - (b) dust monitors
 - (c) temperature probes
 - (d) water/fluid levels
 - (e) rate of flow of fluid through the confined space
 - (f) depth of fluid in the confined space
 - (g) location and frequency of monitoring operations
 - (h) trend analysis
 - (i) action levels.
22. Communications – the learner must show, without prompting, throughout the assessment that they are aware of and communicating regularly with the other members of the rescue team.

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23. Emergency communication links can include:
- (a) radios
 - (b) air horns
 - (c) whistles
 - (d) chalk
 - (e) directional/warning signs
 - (f) associated organisational devised code(s) of signals
 - (g) emergency contact lists.
24. Reports and documentation – the learner must complete the reports and documentation that are relevant to their work activity (in line with organisational requirements) as part of the practical assessment.
25. Emergency arrangements include:
- (a) preparation
 - (b) site arrival
 - (c) raising the alarm
 - (d) going operational
 - (e) aftermath
 - (f) emergency contacts.
26. Rescue equipment – as a minimum, the learner must show that they have arranged and confirmed that the following rescue equipment is in place before entering the confined space:
- (a) communication devices
 - (b) respiratory protective equipment
 - (c) resuscitation equipment
 - (d) rescue stretcher
 - (e) lifelines
 - (f) first aid equipment
 - (g) splints
 - (h) neck collar
 - (i) portable lighting.
27. Casualty – the learner must be subjected to a simulated emergency during the practical assessment, so that the assessor can observe them undertaking the rescue and recovery of an artificial casualty in the region of 50-60 kg.

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28. Record and report - the learner must record and report the emergency in line with organisational procedures, which may include:
- (a) accident book
 - (b) reporting forms under RIDDOR
 - (c) respiratory protective equipment wearer logbook
 - (d) rescue equipment service records
 - (e) formal reports in line with organisational requirements.
29. The circumstances relating to the emergency that the learner records and reports must include:
- (a) date
 - (b) time
 - (c) location
 - (d) events leading up to the emergency
 - (e) personnel involved in or affected by the emergency
 - (f) key instructions and messages received and given
 - (g) action taken
 - (h) arrival time for emergency services and other specialists.
30. Basic first aid - this is not a first aid qualification, but the national occupational standards require the learner to be assessed administering basic first aid. The latest version of Water UK's Occasional Guidance Note includes details for the criteria of basic first aid, which learners as a minimum must evidence on a dummy. Assessors delivering this qualification must hold an appropriate first aid qualification.
31. The learner will show that they are vigilant to possible risks and hazards by demonstrating the following behaviour during the practical assessment:
- (a) undertaking dynamic risk assessment throughout the exercise to identify risks and hazards
 - (b) responding to risks and hazards calmly while implementing appropriate control measures
 - (c) dealing promptly with emergencies in a calm and collected manner.
 - (d) conducting themselves safely throughout the practical exercise.

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Assessment Requirements

The unit will be assessed using a knowledge assessment and a practical exercise, which must be delivered in controlled circumstances.

The knowledge assessment covers the requirements listed in Learning Outcomes 8 and 9, and will be undertaken using a multiple choice paper, which must be delivered in examination conditions.