



National
Operational
Guidance

Hazard

Confined space environment



NFCC
National Fire
Chiefs Council

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Hazard - Confined space environment

Knowledge and understanding

Hazard	Learning outcome
Confined space environment	Understand all associated hazard knowledge



Control measure - Identify a confined space

TRAINING SPECIFICATION

Knowledge and understanding

Control measure element	Learning outcome
Common types of confined spaces	Understand: <ul style="list-style-type: none">• The most common types of confined spaces• Why it is not always easy to identify a confined space
Regulations	Understand: <ul style="list-style-type: none">• The relevant Confined Spaces Regulations
Decision-making and risk assessment	Understand: <ul style="list-style-type: none">• How to use decision-making for confined spaces• How to use appropriate risk assessments for confined spaces
Information gathering	Understand: <ul style="list-style-type: none">• How to identify a confined space in industrial contexts



Control measure element

Learning outcome

Joint on-site training

Understand:

- The benefits of using joint on-site training to identify potential confined spaces in an industrial context

Practical application

Control measure element

Learning outcome

Identify whether work is within an enclosed space or confined space and inform personnel if appropriate

Demonstrate the ability to:

- Determine whether the work environment is an enclosed space or a confined space
- Inform personnel if the work environment is a confined space

Liaise with the responsible person or on-site staff to obtain details about the confined space

Demonstrate the ability to:

- Gather information about a confined space from the responsible person or on-site staff



Control measure - Avoid entry: Confined space

TRAINING SPECIFICATION

Knowledge and understanding

Control measure element

Learning outcome

Achieving objectives while avoiding entry to a confined space

Understand:

- The relevant Confined Spaces Regulations
- What action to take if a risk assessment indicates that personnel should not be deployed into a confined space



Practical application

Control measure element

Learning outcome

Incident commanders must:

- Evaluate the range of options that avoid committing personnel to work in a confined space

Consider requesting specialist advice or assistance if the nature of the confined space is unsafe for personnel to enter

Demonstrate the ability to:

- Evaluate options that avoid the need for personnel to enter a confined space

Demonstrate the ability to:

- Request appropriate specialist advice or assistance for an incident involving a confined space



Control measure - Confined space: Risk assessment

TRAINING SPECIFICATION

Knowledge and understanding

Control measure element

Learning outcome

Fire and rescue service policies and resources

Understand:

- The service's policy on:
 - What type and complexity of confined space incidents can be dealt with by initial non-specialist personnel
 - How more complex confined space incidents will be handled
 - Details of the specialist resources and equipment that may be required

Identify potential hazards

Understand:

- How to gather information about the hazards present in a confined space



Control measure element

Learning outcome

Risk assess the benefits of entering the confined space

Understand:

- How to carry out a risk assessment for confined space working

Safe system of work

Understand:

- What elements should inform the safe system of work
- The need for emergency arrangements

Practical application

Control measure element

Learning outcome

Incident commanders must:
Ensure that personnel do not enter a confined space prior to carrying out a risk assessment

Demonstrate the ability to:

- Risk-assess the confined space prior to committing personnel when entry is unavoidable

Incident commanders must:
Establish a safe system of work and emergency arrangements prior to personnel entering a confined space

Demonstrate the ability to:

- Establish a safe system of work for personnel entering a confined space
- Establish emergency arrangements when personnel are entering a confined space

Adhere to their service's policy when responding to confined space incidents

Demonstrate the ability to:

- Adhere to service policy when:
 - Deploying personnel to a confined space incident
 - Attending a confined space incident
 - Deploying personnel to a confined space



Control measure - Confined space: Supervision, resourcing and communication

TRAINING SPECIFICATION

Knowledge and understanding

Control measure element

Learning outcome

Supervision	<p>Understand:</p> <ul style="list-style-type: none"> • The need for competent supervision during a confined space incident • The role of a confined space supervisor • The role of dedicated safety officers at a confined space incident • The need for appropriate breathing apparatus (BA) entry control supervision for a confined space incident
Competent personnel	<p>Understand:</p> <ul style="list-style-type: none"> • The necessary safeguards for confined space incidents, including: <ul style="list-style-type: none"> - Deploying only competent personnel - Using appropriate equipment - Having appropriate supervision - Using appropriate PPE
Communications	<p>Understand:</p> <ul style="list-style-type: none"> • The need for an effective communication system at a confined space incident • The need for fallback arrangements for communications failure at a confined space incident • The impact on communications of other equipment being used in a confined space • The need for appropriate communication equipment if there is a risk of explosive atmospheres in a confined space • What alternative equipment can be use for communications in a confined space incident

Practical application



Control measure element

Learning outcome

Use only communications equipment that meets the appropriate ATEX classification when personnel enter any potentially explosive atmosphere

Demonstrate the ability to:

- Ensure that only communications equipment that meets the appropriate ATEX classification is used in a potentially explosive atmosphere; this could include:
 - Fire and rescue service communications equipment
 - Communications equipment that belongs to other organisations
 - Personal communications equipment

Conduct regular checks to ensure communication equipment continues to function

Demonstrate the ability to:

- Check the functionality of communications equipment at appropriate intervals

Implement fallback arrangements if there is a failure in the communications equipment

Demonstrate the ability to:

- Implement fallback arrangements if communications equipment fails

Consider requesting and appointing a confined space supervisor

Demonstrate the ability to:

- Establish appropriate supervision and safety precautions during confined space work

Apply the most appropriate level of BA entry control supervision for a confined space incident

Demonstrate the ability to:

- Establish appropriate BA entry control supervision

Commit competent personnel to work in a confined space only following a risk assessment

Demonstrate the ability to:

- Carry out a risk assessment before committing competent personnel to work in a confined space

Commit competent personnel to work in a confined space only following a risk assessment

Demonstrate the ability to:

- Carry out a risk assessment before committing competent personnel to work in a confined space



Control measure element

Learning outcome

Confined space supervisors should:
Liaise with the incident commander to establish or verify the safe system of work

Demonstrate the ability to:
• Liaise with the incident commander to establish or verify the safe system of work

Confined space supervisors should:
• Ensure an analytical risk assessment is carried out

Demonstrate the ability to:
• Review the risk assessment and safe system of work at appropriate intervals

Confined space supervisors should:
Regularly update the incident commander of progress or concerns

Demonstrate the ability to:
• Provide the incident commander with updates on progress or concerns at appropriate intervals



Control measure - Safe system of work: Atmospheric conditions

TRAINING SPECIFICATION

Knowledge and understanding

Control measure element

Learning outcome

Atmospheric testing equipment

Understand:
• The types of atmospheric testing equipment
• What the testing equipment in use can check the atmosphere for

When atmospheric testing and monitoring may be required

Understand:
• The environments and types of incidents that may require atmospheric testing and monitoring
• That it may be necessary to request specialist advice or assistance for atmospheric testing and monitoring



Control measure element	Learning outcome
Exposure limits	Understand: <ul style="list-style-type: none">• Workplace exposure limits
Testing and monitoring atmospheric conditions	Understand: <ul style="list-style-type: none">• When atmospheric testing should be carried out• How atmospheric testing should be carried out• Who should carry out atmospheric testing• The need for regular atmospheric monitoring• The difference between active monitoring and passive monitoring of atmospheric conditions
Ventilation	Understand: <ul style="list-style-type: none">• When the use of ventilation may be beneficial• What types of ventilation can be used
Removal of residues or materials	Understand: <ul style="list-style-type: none">• When the removal of residues or materials may be beneficial• The potential risks of removing residues or materials
Monitoring equipment alarm actuation	Understand: <ul style="list-style-type: none">• How the monitoring equipment functions• What actions to take if the monitoring equipment alarm actuates
Limited capability of atmospheric monitoring equipment	Understand: <ul style="list-style-type: none">• The capabilities and limitations of atmospheric monitoring equipment• The regional detection, identification and monitoring (DIM) capability that is part of the National Resilience response

Practical application



Control measure element

Learning outcome

Carry out testing and monitoring of the atmosphere and use the results to inform the incident plan

Demonstrate the ability to:

- Carry out testing and monitoring of the atmosphere
- Use results of testing and monitoring of the atmosphere to inform the incident plan

Consider requesting specialist advice or assistance for atmospheric detection, identification and monitoring

Demonstrate the ability to:

- Request appropriate specialist advice or assistance for atmospheric testing and monitoring

Consider ventilation to improve internal conditions

Demonstrate the ability to:

- Determine the benefits of ventilation
- Use the appropriate type of ventilation

Isolate or limit all ignition sources before ventilating if flammable gases may be present

Demonstrate the ability to:

- Identify potential ignition sources
- Control identified ignition sources

Identify the presence of materials that may release gases in a confined space, especially if disturbed

Demonstrate the ability to:

- Consider whether there are substances present that may release gases
- Gather information to determine the potential impact of gases being released

Consider the controlled removal of materials, to reduce the quantity of gases being released

Demonstrate the ability to:

- Determine the benefits of removing residues or materials
- Risk assess the impact of removing residues or materials
- Remove residues or materials if this will improve the atmospheric conditions



Control measure - Confined space: Isolation of



hazards

TRAINING SPECIFICATION

Knowledge and understanding

Control measure element	Learning outcome
Control the confined space environment	Understand: <ul style="list-style-type: none">• The need for awareness of:<ul style="list-style-type: none">- The environment- Any processes that may affect the confined space- Any ingress of substances that could be hazardous to people in the confined space- How to gather information about substances present
Isolation from gases, liquids, and other flowing materials	Understand: <ul style="list-style-type: none">• Methods for controlling ingress of substances into the confined space• Methods for removing or diverting liquids from the confined space• The limitations of and precautions to apply when using these methods



Control measure element

Learning outcome

Isolation from electrical or mechanical equipment

- Understand:
- Methods for controlling:
 - Electrical equipment
 - Mechanical equipment
 - Power sources
 - The impact of stored energy that may activate equipment
 - Why it may be beneficial to not isolate power sources
 - How to secure isolation of power sources
 - That it may be necessary to request specialist advice or assistance to isolate hazards

Practical application

Control measure element

Learning outcome

Refer to information provided by SSRI, site working plan or the responsible person, about the storage or use of gases, liquids or flowing materials in confined spaces

- Demonstrate the ability to:
- Obtain and consider information about the presence of gases, liquids or flowing materials in the confined space provided by the:
 - SSRI
 - Site working plan
 - Responsible person

Investigate the possibility of ingress from gas, liquids or flowing materials into the confined space, including surface water

- Demonstrate the ability to:
- Gather information about all potential sources of gas, liquids or flowing materials that may affect the confined space
 - Consider the potential impact of rainwater, water supplies and sewerage systems on the confined space



Control measure element

Learning outcome

Isolate the confined space or sources to prevent the ingress of gas, liquids or flowing materials

Demonstrate the ability to:

- Investigate the possible ingress of substances into a confined space
- Establish appropriate actions to prevent ingress of a substance into a confined space

If isolation or removal of electrical or mechanical equipment is possible, ensure that it occurs before personnel are committed to the confined space

Demonstrate the ability to:

- Determine if it is appropriate to isolate or remove electrical or mechanical equipment
- Use appropriate methods to isolate or remove electrical or mechanical equipment
- Ensure there is no stored energy that could activate equipment
- Use appropriate safeguards to prevent reactivation of isolated electrical or mechanical equipment



Control measure - Confined space: Health and safety considerations

TRAINING SPECIFICATION

Knowledge and understanding

Control measure element

Learning outcome

Selection and use of suitable equipment

Understand:

- The need for equipment to be appropriate to the environment, especially if there is an explosive atmosphere
- The need to appropriately select and secure equipment when it is being used in a confined space



Control measure element	Learning outcome
Personal protective equipment and respiratory protective equipment	Understand: <ul style="list-style-type: none">• Ensure the PPE and RPE used in confined spaces takes into account:<ul style="list-style-type: none">- Limited space and movement- High temperatures- The potential need for emergency evacuation of responders
Access and egress	Understand: <ul style="list-style-type: none">• The need to identify and monitor access and egress routes• The need to identify alternative routes and when they may need to be used• The importance of maintaining the access and egress routes• Why it may be necessary to increase the size of openings to, or in, confined spaces• The benefits of appointing a confined space supervisor
Lighting	Understand: <ul style="list-style-type: none">• The need for lighting equipment to be appropriate to the environment, especially if there is an explosive atmosphere
Be aware of electrostatic build-up	Understand: <ul style="list-style-type: none">• What causes electrostatic build-up• What hazards are presented by electrostatic build-up
Establish arrangements to deal with firefighter emergencies	Understand: <ul style="list-style-type: none">• The legislative requirements for establishing arrangements to deal with firefighter emergencies• The need for recovery systems
Limiting working time	Understand: <ul style="list-style-type: none">• Why there may be a need to limit the time period that personnel are allowed to work in a confined space



Practical application

Control measure element

Learning outcome

Incident commanders must:

Establish and maintain a recovery system for personnel deployed into confined space environments

Demonstrate the ability to:

- Ensure there is a recovery system in place for all personnel entering the confined space hazard area

Incident commanders must:

Ensure that emergency arrangements are maintained and resourced for the duration that personnel are committed to confined spaces

Demonstrate the ability to:

- Ensure there are suitable and sufficient arrangements for the rescue of personnel from the confined space in an emergency

Use only ATEX approved equipment in confined spaces if there is a risk of an explosive atmosphere

Demonstrate the ability to:

- Ensure only ATEX approved equipment is used in a confined space, if there is the risk of an explosive atmosphere

Appropriately select and secure equipment used in a confined space to prevent it causing harm

Demonstrate the ability to:

- Ensure equipment is appropriately selected and secured when it is being used in a confined space

Identify the appropriate PPE and RPE for confined space work

Demonstrate the ability to:

- Ensure personnel use appropriate PPE and RPE when working in a confined space



Control measure element

Learning outcome

Ensure that access and egress is appropriate for the operations being undertaken within the confined space and include contingencies for restricted access and egress

Demonstrate the ability to:

- Identify and monitor access and egress routes
- Identify alternative routes to be used in the event of the original access and egress presenting intolerable risks or becoming unsuitable during the incident
- Maintain the access and egress route so that all personnel working in the confined space are able to withdraw as quickly as possible if required
- Consider increasing the size of openings to, or in, confined spaces if they are not sufficient
- Use a confined space supervisor to provide updates on hazards and operational requirements

Ensure that lighting equipment being used in a confined space is appropriate to the environment and hazards present

Demonstrate the ability to:

- Ensure any lighting equipment used in a confined space is appropriate to the environment

Consider seeking advice from specialist rescue teams, confined space supervisors or on-site staff about the hazard of electrostatic build-up

Demonstrate the ability to:

- Consider the presence of and seek advice on the hazard of electrostatic build-up

Eliminate or isolate sources of ignition if there is a risk of flammable gases in or near to a confined space

Demonstrate the ability to:

- Control the impact of sources of ignition through the use of cordons
- Ensure smoking and vaping are not allowed in or near to a confined space

Account for extended times in the incident plan due to difficulties operating in a confined space

Demonstrate the ability to:

- Factor extended travel and access times into the incident plan



Control measure element

Consider limiting the time personnel can be committed to working in a confined space

Learning outcome

Demonstrate the ability to:

- Control the duration time for working in a confined space