National Operational Guidance

Control measure

Confined space: Health and safety considerations

NFCC National Fire Chiefs Council

Developed and maintained by the NFCC

Contents

Control measure - Confined space: Health and safety considerations

Control measure knowledge

Selection and use of suitable equipment

Any equipment provided for use in a confined space must be suitable for the purpose. If there is a risk of flammable gases in a confined space, which could be ignited by electrical sources such as a portable hand lamp, specially protected electrical equipment should be used.

In most confined spaces, it is impossible to classify the atmosphere present. For information about ATEX equipment for fire and rescue service operations refer to ATEX-approved radios. Equipment must meet the appropriate ATEX classification; for more information on ATEX refer to Health and Safety Executive (HSE) information on ATEX and explosive atmospheres.

All equipment should be carefully selected, bearing in mind the conditions and risks where it will be used. In addition to isolation, equipment may need to be secured against free rotation, as people may tread or lean on it, with a risk of trapping or falling.

Personal protective equipment and respiratory protective equipment

Using personal protective equipment (PPE) and respiratory protective equipment (RPE) can make movement more difficult and add to the effects of high temperatures. Any PPE and RPE used should be suitable for a confined space. However, it is accepted that this is rarely possible in fire and rescue service operations.

The type of PPE and RPE to use will depend on the hazards identified; this could include breathing apparatus with work at height equipment. Account should be taken of foreseeable hazards that might arise and the need for emergency evacuation of responders.

Access and egress

The entry point to a confined space is likely to be within the inner cordon, which is under the control of the fire and rescue service. Access and egress routes should be identified and monitored. However, if these routes present intolerable risks or become unsuitable during the incident, alternative routes should be identified and used if required.

Whenever entry is made to a confined space, the access and egress route should be maintained to

ensure that all personnel working in the space are able to withdraw as quickly as possible should the need arise.

Where the size of openings to, or in, confined spaces is not sufficient, consideration should be given to increasing these. This should take into account the need to operate in PPE and RPE, or to use associated equipment in the space.

Confined space supervisors can advise incident commanders of the hazards associated with restricted access or egress, and operational requirements at incidents involving confined spaces.

Lighting

Lighting equipment for use in a confined space needs to be appropriate to the environment it will be used in, with consideration given to the presence of hazards such as explosive atmospheres.

For further information refer to Operations: Safe system of work: Reduced visibility.

Be aware of electrostatic build-up

If there is risk of an explosive atmosphere, personnel should be aware that an electrostatic discharge can be a source of ignition.

Industries have a means of earthing equipment and have appropriate clothing and PPE specific to confined space working. It is unlikely that non-specialist personnel will have access to such means of reducing electrostatic build-up, also known as static electricity. Incident commanders should consider seeking advice from specialist rescue teams, confined space supervisors or on-site staff.

Eliminate ignition sources

If gases are within flammable or explosive limits, any ignition source, including smoking and vaping, may cause combustion or explosion. If inherent ignition sources are present and identified, isolating the ignition source will help to reduce the risk; consideration should be given to setting cordons at an appropriate distance beyond the confined space.

Establish arrangements to deal with firefighter emergencies

The Confined Spaces Regulations and the Confined Spaces Regulations (Northern Ireland) state that no person at work shall enter or carry out work in a confined space unless there are suitable and sufficient arrangements for their rescue in an emergency, whether or not that arises from a specified risk. Therefore, a recovery system should be in place for all personnel entering the hazard area.

Personnel may encounter organisations working in confined spaces, with recovery systems that range from simple and immediate systems to more extensive recovery and rescue systems.

Depending on the level of access, recovery systems may involve using rope rescue equipment or dedicated confined space winching systems. An emergency team wearing appropriate RPE and associated equipment should also be available at all incidents, except those with good access, adequate ventilation and low risks of a hazardous atmosphere.

Limiting working time

There may be a need to limit the time period that personnel are allowed to work in a confined space, taking into account:

- Whether BA is being used
- Extreme conditions of temperature or humidity
- If the confined space severely restricts movement
- Extended travel times and possible arduous routes to the hazard area
- Extreme noise
- Loss of structural integrity

While some of these are not specific risks or limited to confined spaces, they should still be considered as part of the risk assessment and tackled as far as reasonably practicable.

For a large confined space and multiple entries without breathing apparatus, a logging or tally system may be necessary to check everyone in and out of the hazard area, and to control duration of work.

Strategic actions

Fire and rescue services must:

- Provide suitable and sufficient equipment to rescue personnel from confined spaces in an emergency

Fire and rescue services should:

- Provide ATEX approved equipment for working in confined spaces

Tactical actions

Incident commanders must:

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

environments

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

Incident commanders should:

- Use signage and available risk information to identify explosive atmospheres
- Appropriately select and secure equipment used in a confined space to prevent it causing harm
- Identify the appropriate PPE and RPE for confined space work
- Ensure that access and egress is appropriate for the operations being undertaken within the confined space and include contingencies for restricted access and egress
- Ensure that lighting equipment being used in a confined space is appropriate to the environment and hazards present
- Consider seeking advice from specialist rescue teams, confined space supervisors or on-site staff about 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
- Account for extended times in the incident plan due to difficulties operating in a confined space
- Consider limiting the time personnel can be committed to working in a confined space
- Identify the location of suitable access and egress routes before committing personnel to a confined space