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| Scope |
| This procedure applies to all Company projects, offices, facilities, asset and concession companies and Joint Venture (JV) projects where the Company Management System has been adopted by the JV Board. Where the Company is required to operate another party’s Management System then the requirements of the Joint Venture/Alliance Business Management System (BMS) Assessment (MSC-PR-0002) must be followed in relation to assessing the validity of third party management systems.  Diving Operations and below ground mines are excluded from this procedure, as they are dealt with by specific regulations. |

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| Purpose |
| The purpose of this procedure is to outline and monitor the health and safety controls associated with work in Confined Spaces and in emergency rescue.  The requirements in this procedure are considered to be our current standards and must be adopted as part of a safe system of work. However, Projects and Contracts are also encouraged to identify new methods of working as long as these are: developed through rigorous risk assessment, demonstrably improve on current standards, deliver legal compliance and are approved in accordance with the Control of HSES Derogation procedure ([HSES-PR-0004](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-6992)). |

Procedural Requirements

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|  | | FIGURE 1: is it a Confined Space?  Reference: p9, Document [L101](http://www.hse.gov.uk/pUbns/priced/l101.pdf). 3rd edition, 2014. Safe work in confined spaces. Approved Code of Practice and Guidance. HSE Books. ISBN 978 0 7176 6622 5. |
|  | | |
|  | Competence | |
|  | If the decision chart above confirms the situation is a Confined Space under the Regulations, and following the application of the Hierarchy of Control (Section 7), the Assessment of the Confined Space (section 3.3), and the identified controls, the Site Lead must identify the following applicable roles as part of the Safe System of Work. The designated person(s) for these roles must hold the following competencies. | |
|  | **Confined Space Co-ordinator**   * Low Risk environment – CITB/National Construction College Certificate in Supervision and Management of Work in Confined Spaces. * Medium Risk environment - City and Guilds National Occupational Standard 6150-61 qualification. * High Risk environment -See section 3.4. | |
|  | **Top Man/Person**   * Low Risk environment – Same as CS Entry Team or Top Man Medium Risk Environment. * Medium Risk environment - City and Guilds National Occupational Standard 6150-06 or 56. * High Risk environment - See section 3.4. | |
|  | **Confined Space Entry Team**   * All team members (including the supervisor for the works who receives the Permit) must hold an accredited City and Guilds National Occupational Standard 6150-01, 02, 51 or 52 Confined Space qualifications applicable to the risk category they are entering, in accordance with the definitions at the end of the document. | |
|  | **Rescue Team**   * All team members hold an accredited City and Guilds National Occupational Standards 6150-02, 02, 51, 52 Confined Space qualification applicable to the risk category they are entering and 6150-05 or 55 Confined Space qualifications. They will also be emergency first aid trained. | |
|  | A Confined Space Toolbox Talk is available for briefing ([HSF-TB-0020a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/BMS%20Documents/HSES/Health%20and%20Safety/Procedures/HSF-TB-0020a)). | |
|  | **GENERAL** | |
|  | Wherever possible the need for entry into a Confined Space must be avoided by the use of other work methods and applying a hierarchy of control (see section 7). | |
|  | The Site Lead, in conjunction with the HSE Advisor if necessary, must determine the ‘Risk Environment’ of the Confined Space. | |
|  | The Site Lead and the nominated Confined Space Coordinator (including deputies where required) must assess the Confined Space hazards and define the relevant control measures to be implemented. | |
|  | High risk working will not be permitted for direct employees, only specialist contractors will be utilised who will be trained to 6150-03 or 53 Confined Space qualifications. Their rescue teams will be trained to 6150-03 or 53 and 6150-05 or 55 Confined Space qualification and they will also be emergency first aid trained. Note that specialist contractors are utilised for Confined Spaces work because Balfour Beatty company staff and employees have little ongoing practical experience to meaningfully maintain their CPD and operational competence in this field. | |
|  | planning | |
|  | Consideration must be made with regard to the type of Confined Space, for example sewers or surface water drainage systems. Such consideration should take into account factors such as heavy rain fall, tidal systems or increased flow rates in live sewers, scheduled or not. | |
|  | **CONFINED SPACE COORDINATOR** | |
|  | The Confined Space Coordinator is responsible for | |
|  | * Preparing, or reviewing if prepared by the supply chain, the safe system of work | |
|  | * Ensuring requirements for entry have been completed before entry is authorised and that the entry and rescue teams are fit and capable to perform their duties | |
|  | * Ensuring Confined Space periodic atmospheric monitoring is performed by personnel qualified and trained in Confined Space entry procedures and whose calibration/test certification is valid and in date | |
|  | * Knowing the hazards that may be faced during entry, including the signs, symptoms and consequences of exposure | |
|  | * Completing the permit, including: determining the entry requirements; reviewing the permit , and briefing its requirements with the entry team, renewing/re-issuing permits as required | |
|  | * Ensuring the correct level of resources is engaged to perform the works | |
|  | * Arranging for any barriers and signs required | |
|  | * Ensuring the permit is cancelled when the work is done | |
|  | * Ensure the Confined Space is safely closed and all workers are cleared from the area | |
|  | * Testing the emergency arrangements. | |
|  | **DESIGN RESPONSIBILITIES** | |
|  | [Regulation 9(2) of the Construction (Design and Management) Regulations 2015 (CDM)](http://www.hse.gov.uk/pubns/priced/l153.pdf) places a duty on designers to eliminate foreseeable health and safety risks to anyone affected by the project (so far as is reasonably practicable), when preparing or modifying designs. | |
|  | **HIERARCHY OF CONTROL** | |
|  | It is important to follow the steps in the hierarchy of control measures to manage the identified risks | |
|  | * Elimination – Eliminate all the hazards in the space | |
|  | * Substitution – Use alternative methods to complete the task without entry | |
|  | * Engineering Control – Physical means that limit the hazards | |
|  | * Administrative Control - Establish safe work procedures covering all phases of the entry process | |
|  | * Personal Protective Equipment - The use of personal protective equipment (PPE) may be considered as the last line of defence. | |
|  | Further information on the Hierarchy of Control can be found in [HSF-RM-0020a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-6884) Confined Spaces guidance. | |
|  | **SAFE WORKING IN CONFINED SPACES** | |
|  | Working in Confined Spaces is dependent upon strict adherence to a well-devised safe system of work. Prior to any work commencing in a Confined Space, the Confined Space Coordinator must ensure a risk assessment is carried out and with detailed safe system of work produced, including suitable emergency rescue arrangements. See reference material for further information ([HSF-RM-0020a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-6884)). | |
|  | Factors to be considered include (but are not limited to) | |
|  | 1. Planning | |
|  | 1. Supervision | |
|  | 1. Competence for Confined Spaces working | |
|  | 1. Communications | |
|  | 1. Testing/monitoring the atmosphere | |
|  | 1. Gas purging | |
|  | 1. Ventilation | |
|  | 1. Removal of residues | |
|  | 1. Isolation from gases, liquids and other flowing materials | |
|  | 1. Isolation from mechanical and electrical equipment | |
|  | 1. Selection and use of suitable equipment | |
|  | 1. PPE and RPE | |
|  | 1. Portable gas cylinders and internal combustion engines | |
|  | 1. Gas supplied by pipes and hoses | |
|  | 1. Safe access and egress | |
|  | 1. Fire prevention | |
|  | 1. Lighting | |
|  | 1. Electrostatic ignition | |
|  | 1. Smoking | |
|  | 1. Dealing with emergencies and effecting a rescue | |
|  | 1. Limited working time | |
|  | 1. Means of identifying those working within the Confined Space at any time | |
|  | The safe system of work must be briefed to all employees engaged in working in the Confined Space. | |
|  | **SUITABILITY FOR WORK IN CONFINED SPACES** | |
|  | The Confined Space Co-ordinator carrying out the risk assessment for work in Confined Spaces must consider the suitability of individuals for the work to be done. Where the risk assessment highlights exceptional constraints from the physical layout, the Confined Space Co-ordinator should check that individuals are of suitable build. This may be necessary to protect both the individual and others who could be affected by the work to be done. | |
|  | The Confined Space Co-ordinator must also consider other factors about an individual, for example concerning pre-existing medical conditions (claustrophobia, respiratory conditions like asthma etc.) or physical strength and abilities (e.g. for wearing heavy breathing apparatus), and other advice on an individual’s suitability for the work. | |
|  | The Confined Space Co-ordinator must ensure all equipment used within a Confined Space is intrinsically safe. | |
|  | **ACCESS AND EGRESS** | |
|  | A risk assessment must be undertaken to identify the risks associated with access into and egress from a Confined Space with suitable sufficient controls including | |
|  | * Appropriate, clear and conspicuous safety signs prohibiting unauthorised entry | |
|  | * Suitable egress to allow for a quick escape in an emergency by the entrant | |
|  | * Suitable means to prevent access must be in place when the Confined Space is unmanned | |
|  | A pre-entry checklist must be completed by the Confined Space Coordinator. ([HSF-SF-0020c](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-6887)) | |
|  | Entry of a Confined Space must be controlled and coordinated using a permit system ([HSF-SF-0020b](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-6886)). Where more than one permit is required on the site, then a permit register ([HSF-TF-0020a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-6928)) must be used. | |
|  | **GAS TESTING & MONITORING** | |
|  | Testing of the atmosphere within a Confined Space must be carried out to detect trends or changes in oxygen concentration (above or below ambient levels) or the presence of toxic or harmful gases or vapours, or gases from Dangerous Substances, that may cause asphyxiation, (Anoxia, hypoxia or hyperoxia), or potentially explosive atmospheres. The Competent Person responsible for gas testing and monitoring will be identified within the Safe System of Work. | |
|  | The risk assessment process must identify all of the gases that may be present within the Confined Space and ensure sufficient controls, for example adequate ventilation, are implemented prior to entry. | |
|  | The air within the Confined Space should be tested from outside of the Confined Space before entry into the Confined Space and the test results must be recorded on the Gas Monitor Log sheet ([HSF-SF-0020a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-6885)). | |
|  | Gas testing may need to be ongoing depending on the nature of the potential hazards and the nature of the work. Conditions can change while workers are inside the Confined Space and sometimes a hazardous atmosphere is created by the work activities in the Confined Space. | |
|  | **GAS TESTING EQUIPMENT** | |
|  | Suitable and relevant gas testing equipment must be selected to measure the atmosphere to control the risk from gases identified in the risk assessment. | |
|  | Prior to use, the pre-use monitoring checks must be carried out as per the manufacturer’s instructions and recorded. | |
|  | All gas monitoring equipment must be calibrated, records kept and maintained. | |
|  | **EMERGENCY PROCEDURES** | |
|  | An emergency plan must be prepared prior to entry into the Confined Space. No one must enter or work in a Confined Space unless there are emergency arrangements in place that are appropriate for the level of risk involved in the task/space. | |
|  | The emergency plan will include making provision for extracting personnel from the Confined Space and making provision for first-aid equipment (including resuscitation equipment) where the need can be foreseen. | |
|  | At no time may a Topman/Person enter a Confined Space to attempt rescue. No one is allowed to put themselves at risk during a rescue attempt. | |
|  | The plan will identify as a minimum | |
|  | 1. Raising the alarm and initiating a rescue | |
|  | 1. Emergency contacts | |
|  | 1. Rescue and resuscitation equipment | |
|  | 1. Safeguarding the rescuers | |
|  | 1. Fire safety | |
|  | 1. Control of plant | |
|  | 1. First aid | |
|  | 1. Available public emergency services, including Mines rescue personnel where appropriate | |
|  | 1. Training | |
|  | 1. Incident reporting and investigation requirements ([HSES-PR-0005](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8639)) | |
|  | 1. The process to follow in response to gas testing/oxygen reader device activity. | |
|  | The emergency plan must be briefed to all relevant parties involved with the Confined Spaces operation. | |
|  | Where appropriate the emergency services must be consulted at the planning stages for Confined Spaces work, they should not be relied upon as the primary option for rescue and should only be used as a last resort. | |
|  | Appropriate training must be provided to sufficient personnel to ensure the planned rescue techniques can be successfully implemented without delay. Refresher training will be provided at appropriate intervals. | |
|  | **INSPECTION OF RESCUE EQUIPMENT** | |
|  | All rescue equipment must be visually checked prior to each shift. Lanyard and safety harness users must be trained to an industry recognised standard and undertake safety checks in accordance with the PPE procedure ([HSF-PR-0048](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8083)). | |
|  | Regular inspection and testing of lifting equipment must be in accordance with the Lifting Operations Procedure ([HSF-PR-0039](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8085)). | |
|  | **INSPECTION OF RESUSCITATION EQUIPMENT** | |
|  | The inspection and testing of resuscitation equipment must be undertaken in accordance with the manufacturer’s instructions and must include all accessories and ancillary equipment. Where provided, Automatic External Defibrillators (AEDs) should also be tested in accordance with the manufacturer’s instructions and tests should include regular battery checks. | |
|  | **INSPECTION & THOROUGH EXAMINATION OF RPE** | |
|  | The inspection and testing of RPE will comprise a pre-use visual inspection of all parts of the respirator or breathing apparatus, looking particularly at the integrity of any straps, face-pieces, filters and valves or other attachments including hoods, masks and visors. Any defects discovered on inspection, and which would undermine safe operation, should be remedied before further use. | |
|  | Re-useable RPE must undergo thorough examination and testing on a monthly basis, or every three months if used less frequently to ensure that all parts are present, correctly fitted, and the equipment is in good working order, including (where appropriate) ensuring that it delivers at least the manufacturer’s recommended minimum air volume flow rate. Refer to PPE Procedure ([HSF-PR-0048](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8083)). | |
|  | The air quality of air supplied to breathing apparatus must be tested at least once every three months. | |
|  | **COMMUNICATION** | |
|  | A communication system must be set between the entry team and the Top Man/Person. | |
|  | There must be measures to enable those inside the Confined Space to communicate to those outside the space. This is so they can then initiate rescue procedures or summon help in an emergency. The preference would be to maintain visibility of the entrant. | |
|  | Where visibility of the entrant cannot be maintained a robust communication must be established for emergencies. Communication can be via a number of alternative ways, for example by the tug of a rope, by radio or by means of a ‘lone worker’ alarm. Emergency Arrangements must be tested on a regular basis in accordance with the Emergency Arrangements procedure ([HSES-PR-0003](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-5162)). | |
|  | The Top Man/Person must have adequate means to contact the emergency services, with due consideration to the location of the site. | |
|  | The Confined Space Coordinator must ensure the Top Man/Person has relevant emergency contact information and specific location information, e.g. a grid reference, a designated meeting point, the distance from the main road, ground conditions for emergency vehicles including type of access (suitable for car/four-wheel drive/emergency services vehicles etc.) In urban areas, street names and postal codes are essential. | |
|  | **TRAINING** | |
|  | Only those who have received training in the use of all equipment and the precautions and actions to be taken in respect of Confined Space entry will be involved in the operations. | |

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| Abbreviations / Definitions | |
| **SITE LEAD** | The person directly responsible for the Health and Safety of all employees, subcontractors and third parties, and for the care of the environment, affected by our works. |
| **CONFINED SPACE** | Under these Regulations a ‘Confined Space’ shall have both of the following defining features: |
|  | 1. it shall be a space which is substantially (though not always entirely) enclosed; and |
|  | 1. one or more of the specified risks below will be present or reasonably foreseeable. |
| **SPECIFIED RISK** | Means a risk of |
| 1. serious injury to any person at work arising from a fire or explosion |
|  | 1. without prejudice to paragraph (a) |
|  | * 1. the loss of consciousness of any person at work arising from an increase in body temperature |
|  | * 1. the loss of consciousness or asphyxiation of any person at work arising from gas, fume, vapour or the lack of oxygen |
|  | 1. the drowning of any person at work arising from an increase in the level of liquid; or |
|  | 1. the asphyxiation of any person at work arising from a free flowing solid or the inability to reach a breathable environment due to entrapment by a free flowing solid. |
| **SHIFT** | Continuous period of work between breaks. |
| **CONFINED SPACE CO-ORDINATOR** | The competent person responsible for the management of working in a Confined Space. |
| **TOP MAN/ PERSON** | The competent person in charge on the surface outside the Confined Space. |
| **NOTE: THE DEFINITIONS BELOW RELATE TO THE CITY AND GUILDS COURSE COMPETENCIES AND ARE NOT APPLICABLE IN DETERMINING IF THE STATED EXAMPLES ARE CONFINED SPACES. THE CONFINED SPACE DEFINITION ABOVE AND/OR THE DECISION MATRIX IN SECTION 1.0 MUST BE USED IN THE FIRST INSTANCE TO DETERMINE IF THE WORK AREA IS A CONFINED SPACE.** | |
| **LOW RISK CONFINED SPACES** | Shallow entry with adequate natural or mechanical ventilation, where access is simple and unobstructed and there is no likely risk of flooding, e.g. meter pits, valve chambers, booster-pumping stations, PRV chambers etc.  Vertical, direct, unobstructed access with continuous attachment to a man riding hoist or similar mechanical rescue device. |
| **MEDIUM RISK CONFINED SPACES** | 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, e.g. man 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. |
| **HIGH RISK CONFINED SPACES** | Non-standard entries involving complex operations which introduce additional risks and require specific controls and rescue arrangements e.g. mechanical hazards, physical complexity of system introduced hazards, enhanced specific intrinsic hazards. |
| **REASONABLY PRACTICABLE** | Balancing the level of risk against the measures needed to control the real risk in terms of money, time or trouble. However, you do not need to take action if it would be grossly disproportionate to the level of risk. |
| **RED TEXT** | Not yet available, use current BMS for relevant document |

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| INPUTS | | |
| **Reference** | **Type** | **Title** |
| [SI 1997 No. 1713](http://www.legislation.gov.uk/uksi/1997/1713/made) | Legislation | The Confined Spaces Regulations, 1997 |
| [L101](http://www.hse.gov.uk/pubns/priced/l101.pdf) | HSE Guidance | Safe Work in Confined Spaces - Approved Code of Practice, Regulations and guidance |
| [L153](http://www.hse.gov.uk/pubns/priced/l153.pdf) | HSE Guidance | Managing Health and Safety in Construction  Construction (Design and Management) Regulations |
| [INDG258](http://www.hse.gov.uk/pubns/indg258.pdf) | HSE Guidance | Confined Spaces - A Brief Guide to Working Safely |
| [INDG198](http://www.hse.gov.uk/pubns/indg198.pdf) | HSE Guidance | Working with Sewage - The Health Hazards: A Guide for Employers |
|  | [Guidance](http://www.water.org.uk/publications/water-industry-guidance/classification-and-management-confined-space-entries-oct-2009) | Water Industry Guidance, The Classification and Management of Confined Space Entries |
| [HSES-PR-0003](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-5162) | Procedure | Emergency Arrangements |
| [HSF-PR-0039](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8085) | Procedure | Lifting Operations |
| [HSF-PR-0048](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8083) | Procedure | Personal Protective Equipment |
| [HSES-PR-0005](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8639) | Procedure | Incident Reporting and Investigation |
| [HSF-TB-0020a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-6888) | Toolbox Talk | Confined Spaces |
| [HSF-RM-0020a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-6884) | Reference Material | Confined Spaces |

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| **Reference No.** | **Document Title** | **Retention Period** | **Responsibility** |
| [HSF-SF-0020a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-6885) | Gas Monitor Log Sheet | 6/12 years | Site Lead |
| [HSF-SF-0020b](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-6886) | Permit to Enter a Confined Space | 6/12 years | Site Lead |
| [HSF-SF-0020c](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-6887) | Confined Space – Pre Entry Checklist | 6/12 years | Site Lead |
| [HSF-TF-0020a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-6928) | Permit to Enter Confined Spaces Register | 6/12 years | Site Lead |
|  | RPE Thorough Examination / Test | 5 years |  |