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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 Asset or Concession Company/Joint Venture/Alliance Business Management System (BMS) requirements must be followed in relation to assessing the validity of third-party management systems. |

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| Purpose |
| The purpose of this procedure is to give practical guidance on how to comply with legislative requirements relating to the procurement, labelling, transport, storage, segregation, use and disposal of gas cylinders in the workplace. |

**Procedural Requirements**

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|  | **RESPONSIBILITIES** |
|  | All gas cylinders must ONLY be procured from our Preferred Suppliers to ensure they are supplied in accordance with ‘The Pressure Equipment Regulations 1999’, bear the CE marking and comply with any relevant European Standards. |
|  | The COSHH coordinator(s) must ensure that an up to date COSHH assessment has been completed for hazardous substances contained within the cylinders in accordance with the COSHH Procedure ([HSF-PR-0021](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-1112)), where the COSHH Regulations apply. |
|  | Managers and Supervisors must ensure that cylinders are stored, transported, maintained and used etc. in compliance with this procedure and current legislation. |
|  | All employees using gas cylinders must ensure that the necessary precautions to eliminate or reduce risks have been implemented as defined within the specific Method Statement (Work Package Plan) and risk assessment for the task being carried out. |
|  | **REQUIREMENTS** |
|  | Gas cylinders must be used in a vertical position, unless specifically designed to be used otherwise, located in a cylinder rack or stillage and restrained by wire, chain or nylon strap to prevent them falling over. Both the size of the gas cylinder, its mode of construction and the gas product within must be appropriate to the intended use. |
|  | When transporting gas cylinders the requirements of the Carriage of Dangerous Goods procedure ([HSF-PR-0017](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-1896)) must be followed. |
|  | When cylinders are used for welding purposes, fire fighting equipment must be made available and a hot works permit issued in accordance with the Fire Prevention and Control Procedure ([HSF-PR-0009](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8140)). |
|  | All connections to equipment and/or pipework, including the regulator must be appropriate to the type of gas and pressure being used and within their replacement date. Flash back arrestors must be fitted at the regulators. |
|  | Jubilee clips must NEVER be used for connecting flexible gas supply hoses. Hoses must be secured to fittings by way of an ‘O’ ring band which is crimped into place with a special tool. |
|  | Neither PTFE tape, nor grease may be used on any connections on oxygen systems. |
|  | The correct PPE must be worn for the task being undertaken in accordance with the PPE procedure ([HSF-PR-0048](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8083)) and the task specific Method Statement (Work Package Plan) and risk assessment when handling, moving or connecting-up gas systems. |
|  | Cylinder valves and dust caps, where provided, must be re-fitted to the cylinder valve or regulator when the gas cylinder is not in use. |
|  | **THE PRACTICE OF ‘SNIFTING’, OR VENTING A VALVE ASSEMBLY BY MOMENTARILY CRACKING OPEN A VALVE TO DISPLACE DUST AND DIRT IN THE VALVE ORIFICE, BEFORE SCREWING HOME A CONNECTOR, MUST BE DISCOURAGED AND ABSOLUTELY PROHIBITED FOR TOXIC AND FLAMMABLE GASES.**  If a valve thread or orifice is contaminated by dust or grit the debris should be removed with suction from a vacuum cleaner or by blowing out with dry nitrogen. Safety spectacles must be worn. |
|  | All employees involved in the handling and/or transport of LPG cylinders must be briefed on the Carriage of Dangerous Goods by Road – Gas ([HSF-TB-0017a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-1893)) and the Use and Storage of Compressed Gas Cylinders ([HSF-TB-0012a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-6440)) tool box talks as applicable. |
|  | When lifting using a hoist or crane, gas cylinders must only be lifted using a lifting cradle, slings, clamps or other equally effective means. Valves, shrouds and caps **must not** be used for lifting cylinders unless they are specifically designed to do so. Projects must stipulate this at the time of order or confirm with the supplier prior to lifting operations being carried out. Cylinders must not be raised or lowered on the forks or lift trucks unless a task specific Method Statement (WPP) and risk assessment has been produced and implemented which determines the control measures to prevent them from falling. |
|  | Only sufficient quantities of gas cylinders to cover short-term needs must be procured and stored on site. Arrangements for the regular collection of empty cylinders must be made. In addition, stocks of cylinders must be rotated to ensure ‘first-in’ is ‘first-used’. |
|  | Gas cylinders must be stored away from sources of ignition and combustible or flammable materials, on a flat surface in the open air and at least 3 metres from buildings in a locked cage, above ground and well away from drains and other low lying areas. If this is not reasonably practicable, cylinders must be stored in an adequately ventilated building or part of a building specifically reserved for this purpose. Gas cylinders containing flammable gas, such as LPG, must not be stored in part of a building used for other purposes or within 3 metres of opening windows and doors in buildings. |
|  | Gates and doors to the storage area/compound must always open outwards and always be left unlocked when someone is in the area/compound. At all other times the storage area/compound must be kept locked. |
|  | Gas cylinders used on site must be returned to the storage area at the end of each shift except in the case of vehicle mounted cylinders. The location of the gas cylinder storage area shall be included within the Fire Risk Assessment/Fire Plan in accordance with the Fire Prevention and Control procedure ([HSF-PR-0009](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8140)). |
|  | At the end of each shift any vehicle-mounted gas cylinders which remain stored on the vehicle must be isolated. |
|  | A hard standing area must be provided for the delivery and dispatch of cylinders. |
|  | LPG cylinders must be stored at least 3 metres away from oxygen, highly flammable liquids, oxidisers or corrosive gases or substances, although they may be kept in the same compound. It is preferable to separate flammables from other gases by provision of a fire wall which is at least 2 metres high. The storage area must be kept away from any boundaries, buildings, fixed sources of ignition or electrical equipment by at least the distances below: |
|  | Stores must be at least 3 metres away from any cellars, drains or excavations into which gas could accumulate. Cylinders should not be stored within 1.5 metres of compound fencing. If only a small compound is used (e.g. 3 m x 3 m) cylinders may be stored against the inside of the compound fencing, providing it is not within 3m of any boundary. |
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|  | Empty cylinders must be stored with their valves securely closed to prevent any residue of gas escaping, or air being drawn into the cylinder. In addition empty cylinders should be labelled as MT, an abbreviation for ‘Empty’. Cylinders should be grouped in batches of no more than 1000 kg and separated by a minimum 1.5 metre gangway. All darkened areas should be well lit: lighting should be a minimum of 2 metres above the cylinders. LPG storage areas must not be positioned underneath power cables. |
|  | If LPG used on site is stored in larger storage tanks (other than in individual cylinders) it is essential that the positioning is carefully planned and discussed with the Local Fire Prevention Officer and the Health & Safety Executive.   * Separation distance should be maintained between tanks and adjacent buildings or boundaries as detailed in the table below: |
|  | LPG must not be used as a fuel for heating or cooking within any temporary accommodation unit, other than caravans. Where gas is used in caravans refer to Caravan Parks ([HSF-PR-0010](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-1111)) procedure for full controls. |
|  | Signs must be clearly displayed indicating the presence of the relevant gas, prohibiting smoking and the use of any flame in the area of the store. |
|  | Ensure gas cylinders are clearly marked to show their contents (including their UN Number) and the hazard warning signs associated with their contents during storage on site and when being transported. |
|  | Suitable protective valve caps and covers must be fitted to cylinders, before and during transportation, unless the gas cylinder and equipment is designed to be in use during transportation, such as Hot Boxes etc. |
|  | Cylinders must be stowed to prevent them from moving or falling and must not project beyond the sides or end of the vehicle (e.g. fork lift trucks). This is normally in the vertical position, unless instructions for transport state otherwise. |
|  | Regulators and hoses must be disconnected from cylinders whenever practicable. If this is not practicable, as a minimum, regulators must be closed. |
|  | **INSPECTION, RECORDS AND TRAINING** |
|  | All gas cylinders must be delivered to site by an approved supplier and should have a consignment or delivery note showing the date the cylinders were delivered. |
|  | The Site Lead or nominated deputy must ensure that an external visual inspection of the gas cylinder is carried out, along with any attachments (e.g. valves, flashback arresters, and regulators), to determine whether they are damaged. Visible indicators may include dents, bulges, evidence of fire damage (scorch marks), weather damage (to hoses as well as cylinders) and severe grinding marks etc. by the user. Valves should only be removed by trained personnel using procedures which ensure that either the cylinder does not contain any pressure or that the valve is captured during the removal process. Particular attention should be paid to the direction of thread in valve assemblies. |
|  | Cylinders must be subject to examinations prior to use to ensure safety valves and case is in good condition, hasn’t been tampered with or been damaged. |
|  | All employees using gas cylinders must be provided with relevant information (including documentation from cylinder suppliers and distributors), instructions and training. This includes: |
|  | * The dangerous substances present and the risks they present, including access to any relevant safety data sheets, COSHH assessments and information on any other legislation that applies to the dangerous substance. |
|  | * Task Specific Method Statement (WPP) and risk assessment, in the form of a Task Briefing. |
|  | * Emergency procedures/plans. |
|  | **EMERGENCY PROCEDURE** |
|  | When working with gas cylinders, emergency plans and/or procedures must be produced and stored within the Construction Phase Plan/Facilities Management Plan (as appropriate) with all the project/office/facility emergency arrangements. In the case of gas cylinders that are in use on mobile equipment and/or plant, the emergency arrangements must also be made available within the equipment/plant. |
|  | The emergency plans and procedures must include: |
|  | * Who should contact the Emergency Services, and how? |
|  | * Establishing exclusion zones |
|  | * Emergency drills and testing requirements |
|  | * Communication and warning systems |
|  | * Isolation requirements (nearby plant and equipment as well as gas cylinders) |
|  | * Requirements for checking the areas are safe to return |
|  | The information in the emergency plans and procedures must be made available to the emergency services in accordance with the Emergency Arrangement procedure ([HSES-PR-0029](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-5162)). |
|  | Emergency arrangements must be tested in accordance with the Emergency Arrangements procedure ([HSES-PR-0029](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-5162)) and a record of the test recorded on the Emergency Evacuation and Drill Response Record ([HSF-SF-0009b).](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8135) |

| **Abbreviations / Definitions** | |
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| **ADR** | European Agreement concerning the International Carriage of Dangerous  Goods by Road. |
| **DSEAR** | Dangerous Substances and Explosive Atmospheres Regulations |
| **DGSA** | Dangerous Goods Safety Advisor |
| **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. |
| **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** |
| [HSF-PR-0009](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8140) | Procedure | Fire Prevention and Control |
| [HSF-PR-0017](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-1896) | Procedure | Carriage of Dangerous Goods |
| [HSF-PR-0021](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-1112) | Procedure | COSHH |
| [HSF-PR-0029](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-5162) | Procedure | Emergency Arrangements |
| [HSF-PR-0048](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8083) | Procedure | PPE |
| [HSF-TB-0012a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-6440) | Tool Box Talk | Use and Storage of Compressed Gas Cylinders |
| [HSF-TB-0017a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-1893) | Tool Box Talk | Carriage of Dangerous Goods by Road – Gas |
| External | Reference | [Transportable Pressure Vessels Regulations 2001](http://www.legislation.gov.uk/uksi/2001/1426/contents/made) (TVPR)  <http://www.boconline.co.uk/en/sheq/gas-safety/cylinder-safety/storing-cylinders/storing-cylinders.html>  The Safety Use of Gas Cylinders, HSE INDG 308 Rev 1 4/02 |
| External | Reference | Schedule 8 of [Carriage of Dangerous Goods (Classification, Packaging and Labelling) and Use of Transportable Pressure Receptacles Regulations 1996](http://www.hse.gov.uk/comah/sragtech/docs.htm) (CDGCPL2) |
| External | Reference | Gas Safety Installation and Use Regulations |
| External | Reference | Fire Prevention on Construction Site – The Joint Code of Practice on the Protection from Fire of Construction Sites and Buildings Undergoing Renovation |
| External | [Website](http://www.uklpg.org/advice-and-information/cylinder-return-for-civic-amenity-sites/) | UKLPG Discarded Gas Cylinder ‘repatriation’ scheme |

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| **OuTPUTS** | | | |
| **Reference No.** | **Document Title** | **Responsibility** | **Retention Period** |
| [HSF-SF-0009b](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8135) | Emergency Evacuation and Drill Response Record | Site Lead | 6/12 years |
| [HSF-TB-0012a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-6440) | Use and Storage of Compressed Gas Cylinders | Duration of Project | Site Lead |
| [HSF-TB-0012b](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-10992) | Safe Use of Oxy-Fuel Systems | Duration of Project | Site Lead |