

Health and Safety Standard No. 03

Group	Property, Development and Retail Management
Title	Use of Acetylene
Date	November 2014

Overview

Due to the potential for instability of acetylene gas cylinders in any fire situation, the Fire Service will impose a 200 metre exclusion zone and may even decide not to fight/extinguish a fire. The exclusion zone acts as a buffer should the cylinders explode from the heat. Alternatively, the Fire Service might decide to cool any cylinders for a period of at least 24 hours by continuously spraying them with water, prior to their removal.

Where a cylinder explodes during or following a fire, the resulting dangers can include a travelling fire ball, projectile hazards, flying glass and structural damage to nearby buildings.

The potential immediate consequences of such actions on a Landsec development project or as part of our service providers or contractors works could have a major impact to the opening of a development or the operation of an existing centre during an extension, re-model and or even maintenance works. Also, the secondary effect of the potential water damage could be disproportionate to the size of the original incident.

Given that the potential consequences of any incident involving acetylene far outweighs the benefits of using acetylene on a Landsec Project or Property, the decision has been taken to ban the use of acetylene where a practical alternative exists - alternative cutting and welding techniques, such as cold-cutting, electric arc-based cutting and welding and brazing exist and should therefore be used wherever practical.

Noted below is the process that **must** be followed if the contractor or service provider believes that no alternative to acetylene for cutting or welding can be used.

Responsibilities and process

A Justification Report relating to any proposal to use acetylene gas cylinders on any development site or Landsec Centre/Property must be presented to the relevant Contractor's and or Centre/Property competent person and Landsec Group Head of Health and Safety for approval prior to its use – this justification report must be accompanying with a bespoke, site specific DSEAR (Dangerous Substance and Explosive Atmosphere Regulations 2002) risk assessment.



Production of a Justification Report, and obtaining the necessary approvals in sufficient time so as not to hinder production, is the responsibility of any contractor or service provider involved in the use of acetylene gas cylinders anywhere across the Landsec development and maintenance programme.

Justification report format

The report should describe what alternatives are available and those that have been explored to perform the desired function. Justification should be made by comparing alternative welding/cutting techniques on the grounds of:

Justification report style

1. Proposal - synopsis of your proposal
2. Alternative welding/cutting techniques
3. This shall explore the options available using the principles of a risk management process and shall be attached as an appendix to this report.
4. Proposed use of acetylene cylinders

The controls shall consider the following:

- Options for off-site prefabrication and remedial work
- Location of on-site prefabrication/remedial work area (include location plan as an appendix to this report),
- Proposals for storage and security of cylinders,
- Emergency procedures,
- Additional controls to minimise risks (see below).

Where it is not reasonable to remove a work piece from site the following controls should be considered, as an absolute minimum:

1. The controls for on-site use of acetylene shall clearly indicate logging and tagging of each cylinder; details of which shall be held by the Contractor and or Centre/Property Management competent person.
2. A Permit to Work needs to be completed on a development project by the Contractor in a Centre or property the use of the LS Permit must be completed.
3. The size of the acetylene cylinders shall be restricted to the size of the job and should not exceed 1 day's use.
4. Only use regulators, flashback arrestors, hoses and blowpipes designed for acetylene and oxygen, respectively, and marked and manufactured to the correct BS EN ISO Standards (see 'Further information')
5. Ensure all cylinders filled with acetylene gas are colored 'Maroon' (RAL 3007)



6. Where any cylinders are within 200 metres of any building they shall be accompanied at all times by a person assigned to manually handle the cylinders using a mobile trolley. In this instance, the person assigned to manually handle any acetylene cylinder shall carry at all times a means of communication for direct contact with the relevant Contractor and or Centre/Property Management competent person. During any evacuation of the building the acetylene cylinder shall be wheeled on its trolley to a safe place
7. Knowledge and awareness, particularly what to do in the event of an emergency
8. At the end of each day any acetylene cylinder shall be stored securely in a location agreed by the Contractor and/or Centre Management competent persons.
9. On Construction Sites, you must refer back to the Construction Site Fire Management Plan and amend accordingly.
10. In our Centers and Properties you must refer to the Property Fire Risk Assessment and amend accordingly.

Other relevant information

Include copies of all relevant licenses and registration certificates for the use of acetylene and its transportation (e.g. The Carriage of Dangerous Goods and Transportable Pressure Equipment [Amendment] Regulations 2005).

Review of risks and controls

State the frequency for periodic review of this document, the need to use acetylene and the control measures being put into place.

The use of the acetylene for welding and or cutting techniques on a Landsec development or for any maintenance works within a Centre or Property is not permitted UNLESS approved by the relevant Contractor, Centre or Property competent person and Clive Johnson, Landsec Group Head of Health and Safety.

Further reading

Cylinders in fire L6 BCGA 2012 www.bcga.co.uk/publications

The design and construction of manifolds using acetylene gas from 1.5 bar to a maximum working pressure of 17 bar (246.5/bf/in²) Code of Practice 5(rev2) BCGA 2012 www.bcga.co.uk/publications

INDG 327 Working safely with acetylene <http://www.hse.gov.uk/pubns/indg327.pdf>

The Dangerous Substances and Explosive Atmosphere Regulations
<http://www.legislation.gov.uk/ukxi/2002/2776/contents/made>



Fire Prevention on Construction Sites Eighth edition – Joint Code of Practice on the Protection from Fire of Construction Sites and Building Underground Renovation.

Further information

See www.hse.gov.uk/fireandexplosion/acetylene.htm for more resources relating to acetylene.

Further information, publications and contact information for BCGA is available at www.bcg.co.uk.

Action to be taken: 12 November 2014

Status: Mandatory

Further help and contacts: If you need any further information or guidance please contact any member of the Health, Safety & Security Team.