

SHROPSHIRE FIRE AND RESCUE SERVICE

FIRE SAFETY ADVICE SHEET

STORAGE AND USE OF ACETYLENE CYLINDERS

The Regulatory Reform (Fire Safety) Order 2005 (the Order) requires the Responsible Person to make a suitable and sufficient assessment of the risks to which 'Relevant Persons' (any person who is or may lawfully be on the premises or in the immediate vicinity of the premises who may be at risk) are exposed. This includes those presented by any dangerous substance liable to be in or on the premises.

The Order also requires that the Responsible Person provide their employees with suitable relevant information on the risks (including any dangerous substances) and the preventive and protective measures identified in the risk assessment.

The use of acetylene cylinders in welding and cutting operations is prevalent in manufacturing and industrial businesses, and the nature of acetylene presents its own unique hazards that you will need to consider when carrying out your fire risk assessment.

It is important to remember that the RRO requires you to consider the effects of your undertaking on persons in the vicinity of your premises, and current procedures for dealing with incidents where acetylene cylinders have been affected by fire.

Incidents involving acetylene cylinders can be very onerous and time consuming. Shropshire Fire and Rescue Service's overriding priority is the safety of the public and its crews and will normally adopt the following operational response. Once it is suspected that an acetylene cylinder has been affected by fire, we will:

- Evacuate all non-Fire Service personnel from the immediate area.
- Establish a 200m hazard zone around the cylinder.
- Cool the cylinder with water for a period of at least 24 hours.
- Consider evacuation of all members of the public within the 200m zone.

You should be aware these incidents cannot be safely dealt with in a short period of time, so any measures that can be put in place to reduce the likelihood of acetylene cylinders becoming affected by fire will reduce the financial and disruptive effects on your business, together with a corresponding impact on your local community.

General safety measures should include:

- Remove cylinders or reduce their numbers.
- Consider changing your processes to remove the need to use acetylene.

- Acetylene cylinders should not be sited or stored so as to affect the means of escape from the premises. This applies equally to both internal and external escape routes.
- Acetylene cylinders should be secured in the upright position (this is why they have a flat base), as any mechanical impact may cause the contents to start self-heating creating a probable explosion risk.
- Suitable maintenance and checking procedures to ensure all persons using the equipment are suitably competent, and aware of the procedures to be followed in the event of an emergency.
- Appropriate emergency plans (what to do in the event of a fire).
- Premises should only contain the minimum number of cylinders necessary for that day's work, the remainder being safely stored in a secure area away from any heat sources or direct sunlight. Never allow the temperature of any part of the acetylene system to rise above 54°C.
- Storage areas should be remote from the main building(s), reducing the chances of their involvement, if a fire occurs within your premises.
- These storage areas should also be free from any combustible materials, and be secure enough to prevent, as far as is possible, deliberately started fires affecting the cylinders.
- An assessment of the effect of combining acetylene with other substances (e.g. oxygen).
- Arrangements for the safe use, handling and transportation of acetylene cylinders, including any necessary safety signs.
- The presence of ignition sources, heat sources and other combustible materials.
- Providing details of the number, size and location of all acetylene cylinders to Shropshire Fire & Rescue Service

There are a number of guidance documents available to assist you in assessing the risks from fire, and provide general safety advice on the use and handling of acetylene cylinders. INDG297 – 'Safety in gas welding, cutting and similar processes' can be found at: <http://www.hse.gov.uk/pubns/indg297.pdf>

Remember, you are responsible for managing the risks from fire and dangerous substances in your premises.

Advice on dealing with dangerous substances in your fire risk assessment can be found on both our website and that of the Department for Communities and Local Government.

For further information on the Regulatory Reform (Fire Safety) Order 2005 please contact:

- Department for Communities and Local government - <http://www.communities.gov.uk>
- Shropshire Fire and Rescue Service - www.shropshirefire.gov.uk

Or for general fire safety matters, Shropshire Fire and Rescue Service can be reached on **01743 260260** or via our web site at **www.shropshirefire.gov.uk**