

Use of Gas equipment in the Easingwold Outdoor Centre cabin. June 2011

Regulations on the use of LPG prevent the Centre from supplying gas or gas appliances. Groups using the Centre can, at their own risk, bring their own gas and gas appliances to use in the cabin.

Any group bringing bottled gas to the Centre must conduct its own risk assessment for its supervision and use, and must ensure adequate ventilation at all times.

The Environmental Health Service at Hambleton District Council (which could prosecute breaches of health and safety legislation) has provided the following basic facts and precautions when using LPG:

Basic Facts about LPG

- LPG is a colourless, odourless gas, which is highly flammable. In order to detect releases of LPG from equipment and storage cylinders it has been given a distinctive odour;
- LPG is highly flammable (flammability limits 2% to 10% in air), therefore there should be no ignition sources in close proximity to areas where LPG is stored;
- There are 2 types of LPG that are in general use: Butane and Propane (Butane has a much lower vapour pressure than Propane);
- LPG has a density of 1.5 so it is heavier than air. It is therefore difficult to disperse and should never be used or stored below ground, as this could result in asphyxiation when released in a confined space. It can collect in drains and gullies too;
- Liquid LPG is approx. half the weight of water and therefore floats on top of water;
- LPG is stored under approximately 7 bar (100 psi) pressure as a liquid;
- 1 volume of liquid propane will produce 250 volumes of gas when vaporised;
- When LPG burns it combines with air to produce carbon dioxide and water vapour. However if there is inadequate flueing and or ventilation, or poor mixing of the air and gas, toxic carbon monoxide gas can be produced;
- For every litre of LPG liquid burnt, approximately a litre of water vapour is produced;
- Liquid propane freezes on contact with the skin due to the rapid absorption of heat caused by liquid vaporisation;
- It acts as a solvent on certain petroleum and natural rubber compounds, so hoses have to be of a special resistant materials;
- 'Empty' cylinders are still dangerous because they are NOT empty. There is still a residual amount of gas inside an 'empty' cylinder which can ignite and produce an explosion.

Basic precautions for LPG cylinders

- Ensure cylinders and associated hoses, pipework, and appliances are in good repair, protected from damage, secured in position and tamperproof;
- Ensure they are sited in compliance with the LPG suppliers' guidance at appropriate separation distances, on hard standings with no indents, in well ventilated areas and away from ignition sources and combustible materials;
- Comply with the LPG suppliers' operating instructions and maintenance advice;
- Ensure that anyone who works on your installation is competent to do so;
- Do not smoke when changing cylinders;
- Store empty cylinders in a well-ventilated place outside

This advice outlines only the basic risks and precautions associated with LPG cylinders and their use.