RISK MANAGEMENT PROGRAMME FOR THE SAFE USE AND STORAGE OF LPG CYLINDERS

Liquefied Petroleum Gas (LPG) is the term used to describe one of two extremely flammable gases, Propane and Butane. Fires involving LPG cylinders can be devastating with cylinders capable of being thrown for hundreds of metres if ruptured.

The potential for serious fires involving LPG cylinders can be reduced by implementing a fire risk management programme to minimise inception hazards and ensure cylinders are stored correctly. Storage of LPG cylinders must be in accordance with the Dangerous Substances & Explosive Atmosphere Regulations 2002 (DSEAR).

A designated/competent person should oversee the programme to ensure all aspects are properly managed and any required corrective action is implemented without delay.

The following information is provided for guidance purposes only

1) GENERAL USE AND STORAGE GUIDANCE

When storing LPG cylinders within a workplace:

a) only cylinders that are properly labelled and colour-coded to BS EN 1089-3 Transportable Gas Cylinders – Gas cylinder identification to be stored

b) any damage to the cylinders to be reported to the supplier immediately

c) all gases to be assessed in relation to the Control of Substances Hazardous to Health Regulations 2002 (COSHH) and appropriate safety data sheets to be kept

d) operatives using or handling cylinders to wear appropriate low-flammability clothing, safety footwear and suitable eye protection

e) empty cylinders to always be stored separately from full cylinders

f) cylinders to be stored away from heat and ignition sources

g) cylinders to be stored with their valves uppermost.

d) storage areas to be secured to prevent access by unauthorised persons

e) warning notices to be displayed at the storage area which should identify the gases being stored

f) smoking and naked lights to be prohibited in the area and suitable notices displayed.

Where cylinders have to be stored within a building used for other purposes:

a) cylinder storage to be on the ground floor in a room with at least one external wall and a doorway leading directly into the open

b) the storage area to be separated from the remainder of the building by walls and floors built to fire compartment standards as specified in the LPC Design Guide for the Fire Protection of Buildings 2000.

3) STORAGE OF CYLINDERS IN THE OPEN AIR

When storing LPG cylinders within the open:

a) cylinders to be stored in a secured area away from all property boundaries, public access routes, fire escapes, buildings and drains. Where practical this distance should be at least 5-7 metres

b) cylinders to be stored within a lockable cage. Where this is not possible they are to be within a compound, fenced to a height of at least 1.8m, and gates locked with good quality closed shackle padlocks

c) flammable materials, naked flames and smoking to be prohibited within the storage area and for 3 meters surrounding
d) cylinders to be stored upright on a firm, level, well-drained surface (e.g., concrete pad) and secured to prevent falling

e) the storage area to be kept clear of vegetation such as the growth of weeds, grass and shrubs

f) cylinders to be protected from direct sunlight by a light, open-sided weather covering of non-combustible construction (tarpaulins not to be used).

4) STORAGE NEAR OTHER GASES

LPG cylinders to be stored separately away from oils, paints or other corrosive or flammable liquids. Propane or Butane cylinders to be stored a minimum of 3 metres away from ALL other gas cylinders.

5) STORAGE IN STACKS

Storage of large quantities of LPG cylinders to be separated into stacks to reduce the potential for large scale explosion. Where more than 1,000 kg of LPG is stored, separate stacks are required and further site-specific advice should be obtained.

6) PORTABLE FIRE EXTINGUISHERS

Whilst adequate and suitable extinguishers should be located throughout the premises, it is not recommended that fires involving LPG cylinders are tackled with a fire extinguisher. Procedures should be in place to contact the fire brigade without delay and to ensure the area is evacuated immediately.

7) TRAINING

Employees to be appropriately trained and understand the properties of gas they are using. Specific training concerning action to be taken in the event of an emergency is essential.

8) SAFE USE OF LPG CYLINDERS

The following minimum precautions to be adhered to:

a) cylinders in use to be kept clear of all heat sources, especially oxy-fuel gas torches and electrical welding tools

b) grease or oil never to be allowed to come into contact with cylinders

c) cylinder valves only to be opened with a proper key. If the valve is damaged no attempt to be made to open it

d) cylinder valves always to be kept closed when not in use

e) constant ventilation to be provided whenever cylinders are in use

f) only regulators designed for the gas to be used

g) flashback arrestors to be fitted downstream of the pressure regulators for welding and similar applications

h) only purpose-made hoses in good condition, complying with BS 3212:1991 Specification for flexible rubber tubing, rubber hose and rubber hose assemblies for use in LPG vapour phase and LPG/air installations, to be used

i) the condition of the hose connections to be checked prior to use each time and records of the inspection to be maintained

j) all cylinders to be maintained in clean condition.

9) FIRE RISK ASSESSMENT

It is a statutory duty for employers or occupiers of premises to carry out an assessment of the risk from fire to their employees and others. This duty is formulated in the Regulatory Reform (Fire Safety) Order 2005. As a result, the responsible person must make a suitable and sufficient assessment of the risks to which relevant persons are exposed. When the fire risk assessment process is carried out consideration is also to be given to an assessment of the fire spread risks from the building construction, the processes within the building and the amounts or types of hazardous substances present. Further information and guidance may be found at the web site for the Department for Communities and Local Government.

www.communities.gov.uk/fire/firesafety/firesafetylaw/

The fire risk assessment should also be reviewed annually or following any change to buildings or the processes carried on within.

10) FURTHER GUIDANCE

Further guidance is available from the RISC Authority document RC8 – Recommendations for the storage and use of common industrial gases in cylinders including LPG available at www.riscauthority.co.uk and the LPG Association’s Code of Practice 7 www.uklpg.org

IMPORTANT NOTE

The information contained herein is designed for guidance only and NFU Mutual cannot accept responsibility for any errors or omissions arising from its use.