

Portable and Transportable Space Heaters

Understanding the Risk

Portable or transportable heaters are in common use, particularly in commercial premises, to supplement existing fixed heating systems or for use on days when the weather is inclement.

Portable or transportable heaters are more likely to cause fires than fixed heating systems as they introduce fuel hazards, open flames, or hot surfaces, often in the presence of combustible construction or contents.

Fire often results from them being located too close to combustible materials. Fire can be caused by paper, clothing or similar items placed on top of, or against the hot surface of the heater.

Portable or transportable heaters come in various forms:-

Cabinet heater a form of radiant LPG fuelled space heater where the cylinder of gas is located inside the metal casing or cabinet which incorporates the radiant panel.

Tank-top heater gas fuelled heater with a radiant panel fixed directly to the top of the gas cylinder.

'Torpedo heater' / salamander A common name for transportable fan-assisted space heaters, whereby a flame from a liquid or gaseous fuel is subject to a fan to intensify the heat and distribute it over a wide area.

These heaters can produce intense heat and can be fuelled by a variety of fuels – diesel, fuel oil, paraffin, liquefied petroleum gas (LPG) either propane or butane or natural gas.

Related Loss Statistics

The FPA statistic in the UK show that 159 fires in commercial buildings are caused by space heating appliances between 2009 and 2016 with an associated cost of £28m or an average of £177,625 per loss.

Controlling the Hazard

General

Fixed heaters are preferable to the use of portable heaters. If it is necessary to use portable heaters; they should be used and maintained in accordance with the manufacturer's instructions



Adequate ventilation should be provided for the area in which the heater is to be used and certainly not in areas where flammable gases, vapours or combustible dusts may be present.

The use of portable heaters in warehouses is not recommended.

Portable heaters should not be covered in any way and shall be installed to provide clearances to combustible material not less than 2 metres

Heaters, other than electric appliances with unexposed elements and an outer casing temperature that does not exceed 120°C, should be sited on a non-combustible floor or surface

Portable heaters should not be handled or moved while in operation or when hot.

Portable heaters brought to the workplace by staff should be prohibited.

Where suitable portable heaters are used, they should be subject to a fire risk assessment in accordance with current legislation.

LPG-fuelled heaters

Heaters should carry an EC mark.

Fuel piping should be as short as possible and not subject to tension.

The correct fuel should be used in accordance with the manufacturer's instructions.

Substituting propane for butane (or vice versa) is extremely hazardous without the appliance being correctly modified by the manufacturer or other competent person.

Storage of spare gas cylinders should be kept to a minimum: any spare cylinders should be protected from direct sunlight and other environmental effects.

Heaters should not be used in basements or in low lying locations where leaking vapour may accumulate.

Liquid fuelled heaters

The use of paraffin / kerosene heaters in the workplace should be avoided wherever possible. The hazards associated with this form of heater are increased by the need to store the fuel and refill the tank. However if it is necessary to use such a heater then the appliance must have a British Standards Institute (BSI) kitemark or UL647 approval.

It is essential that the correct fluid is used, with only a minimum amount stored (ideally outside the premises). Preferably only 9 litres (2 gallons) and no more than 23 litres (5 gallons) should be available, stored in closed purpose made containers away from sources of heat.

Refuelling should not be undertaken whilst the appliance is in use. Paraffin fuelled heaters should be allowed to cool before refuelling.

Refuelling should be undertaken outside the premises, where precautions can be taken to minimise fuel spills. Any spilled fuel cleaned up straight away.

Firefighting

Adequate numbers of suitably approved fire extinguishers installed in accordance with BS5306: Part 8 and inspected and maintained in accordance with BS 5306: Part 3, should be available to fight a fire, and be appropriate for the type of heater in use.

A fire involving a release of gas from a cylinder should only be controlled and not extinguished until such time as the gas supply can be shut off at the valve.

The fire brigade should be called to all fires involving heaters and gas cylinders.

Reference

1. Fire Statistics, United Kingdom
2. Regulatory Reform Fire Safety Order (RRFSO) 2005
3. RC8: Recommendations for the storage, use and handling of common industrial gases in cylinders including LPG, Fire Protection Association, 2005
4. RC15: Recommendations for the use of portable and transportable heaters in commercial and industrial premises
5. BS 5306: Fire extinguishing installations and equipment on premises. Part 8: 2012, Selection and installation of portable fire extinguishers.
6. BS 5306: Fire extinguishing installations and equipment on premises. Part 3: 2009, Code of practice for the inspection and maintenance of portable fire extinguishers.
7. NFPA 31: Standard for the Installation of Oil-Burning Equipment, 2016 Edition
8. UL647: Unvented Kerosene-Fired Room Heaters and Portable Heaters

Documents:

- Portable Fire Extinguishers
- Flammable Liquids
- Fire Safety Flammable Gases

For further information please contact your local AIG risk engineer.

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