Heating

NUT COLD WEATHER HEALTH & SAFETY BRIEFING - ENGLAND

This briefing advises on the legal requirements governing heating levels in schools and the steps to be taken in dealing with the various types of heating problems which are commonly encountered during cold weather and snow.

Heating Standards for Schools

> Minimum Temperatures

Until October 2012, the legal requirements which specified the minimum temperatures which had to be maintained in school classrooms were set out in the **Education School Premises Regulations 1999**.

These Regulations provided that, in areas where there was a normal level of physical activity associated with teaching, the appropriate minimum temperature was **18ºC (64.4ºF)**. In areas where there was a lower than normal level of activity (e.g. sick rooms) or higher than normal level of activity (e.g. gymnasia and also washrooms), the appropriate minimum temperatures were **21ºC** and **15ºC** respectively. These regulations were replaced as of 31st October 2012 by the School Premises (England) Regulations 2012. These regulations do not specifiy minimum temperatures for any parts of a school. **Despite removal of this regulation, the NUT position remains that temperatures in school classrooms should be at least 18ºC (64.4ºF).**

The **Workplace (Health, Safety and Welfare) Regulations 1992**, which apply to all workplaces, including schools, set out requirements on minimum temperatures in workplaces. Regulation 7 requires that temperatures shall be "reasonable" and the accompanying Approved Code of Practice defines this as **"normally at least 16°C" (60°F)** (para 43) during "the length of time people are likely to be there" (para 49). Although this is lower than the minimum temperature previously required by the Education (School Premises) Regulations, it applies to non-teaching areas as well as classrooms.

> Maximum Temperatures

There are no legally-prescribed **maximum** temperatures for school premises or other workplaces. The Workplace Regulations and accompanying Approved Code of Practice require, however, that all reasonable steps are taken to achieve a reasonably comfortable temperature by, where necessary, special ventilation measures including provision for fans.

> Thermometers

The Workplace Regulations also require that a sufficient number of thermometers should be available, at a convenient distance from any part of the workplace, to enable temperatures to be measured in any part of the workplace. They do not, however, require a thermometer to be provided in every room.

> Hot Water

The School Premises (England) 2012 Regulations include provisions relating to risks from hot

water. Regulation 9 provides that the temperature of hot water at the point of use must not pose a scalding risk. Guidance to this regulation sets out that, to avoid the risk of scalding, it is good practice to ensure hot water does not exceed 43°C.

Heating Problems

The NUT does not expect its members to continue to work in situations in which the legal requirements concerning the health, safety and welfare of employees and others are not being met.

In dealing with heating problems, reference may be made to Regulation 7 of the Health and Safety at Work etc Act 1974 which places a statutory duty upon employees to take reasonable care for the health and safety of themselves and others. This duty may require teachers to withdraw themselves and their pupils from situations in which the physical conditions may affect the health and safety of themselves and their pupils.

The type of heating problems occurring in school usually fall into one of three categories: longstanding faults; temporary faults, which may or may not be capable of being remedied quickly; and problems caused by policies on operation of heating systems. These are considered in turn below.

In general, local authorities remain responsible for providing funds for replacement of heating systems which have reached the end of their useful life and for emergency replacement of heating systems. Under local management, funding for general maintenance of heating systems, including replacement of defective parts, forms part of schools' delegated budgets which are under the control of governing bodies. Local authorities nevertheless retain legal responsibility as the employer for the health and safety of employees and others on the premises such as pupils and also retain the power to arrange for work to be carried out in schools which is necessary for health and safety reasons and to charge schools' delegated budgets accordingly.

Head teachers are responsible for the internal organisation and management of schools. They have the power to act in emergencies, including by deciding to close all or part of schools in the case of heating system failures. Where such decisions are taken, adequate notice of closures should be given to parents. Pupils should be given letters to parents informing them that closures will continue until adequate heating has been restored. Closing schools will not, however, usually be possible on the first day of heating failures since adequate notice to parents will not be possible.

> Longstanding Faults

Many problems result from longstanding faults or inadequacies in school heating systems which local authorities or governing bodies are unable or unwilling to replace or repair. Where such faults exist, the following steps should be taken:-

- the matter should be raised with the head teacher and information sought on the action proposed by the local authority or governing body to repair or upgrade the heating system;

- temperatures should be monitored in any classroom or other area with heating problems on a twice daily basis at the same time each day in order to provide evidence of the problem;

- if the local authority or governing body is unwilling to accept that difficulties exist or seek to argue that they are unable to take action on financial or other grounds, the NUT should be contacted for assistance (see below).

- where temperatures are consistently below the levels required by law, the head teacher

should take appropriate action to ensure that teachers, support staff and pupils are not required to work in inappropriately heated areas. Such action might include bringing in temporary heating sources, rearranging timetabling in order to move classes, or closing all or part of the school.

The NUT does not regard the use of temporary portable heaters as an appropriate solution other than as a genuinely temporary measure in emergency situations while action is being taken to repair the heating system. It is the NUT's view that portable gas heaters should not now be used where other temporary heating systems are available which do not pose health and safety risks from fumes, fire hazards etc. Where such heaters are provided in the absence of any other temporary heating system, HSE guidance on the safe use and storage of portable gas heaters (see below) should be followed.

> Sudden Temporary Faults

Where sudden faults or failures arise with heating systems, the NUT safety rep should ensure that the head teacher has firstly taken action to ensure that the system is repaired as quickly as possible and secondly given consideration to appropriate additional measures to be implemented until the system is repaired. Again, such measures might include bringing in temporary heating sources, rearranging timetabling in order to move classes, or closing all or part of the school.

Where temporary faults occur which can be resolved within 24 hours, school closure will, as noted above, in most cases be impossible since there will be no opportunity to provide notice of closure to parents. Other appropriate action may nevertheless be possible, which may include closing those parts of schools most severely affected, rearranging timetabling or bringing in temporary heating sources.

Again, the NUT does not regard the use of portable temporary heaters as an appropriate solution other than as a temporary measure while action is being taken to repair the system. The length of time for which the system will be out of order will influence the NUT's view as to whether the use of such heaters as a temporary measure is appropriate. The NUT again advises against the use of portable gas heaters unless no other temporary heating system is available.

> Problems caused by Employer Heating Policies

The NUT has encountered problems in some cases due to inadequate levels of heating caused by local authority or governing body policies designed to save heating costs. These can include turning down boiler temperatures at all times; switching systems off when pupils leave; and extending Christmas holidays so that schools do not have to be heated during this period.

Local authority and governing body policies which lead to inadequate levels of heating are unacceptable to the NUT.

In some areas, Codes of Practice have been agreed between the local authority and teachers' organisations on temperatures in schools. Examples cover procedures in emergency situations, out-of-hours heating and temporary closure. Such policies should continue to provide for minimum temperatures of 18°C in all classrooms.

HSC Guidance on Safe Use and Storage of Portable Gas Heaters

A copy of the Health and Safety Commission's guidelines on methods of safe use and storage of portable gas heaters is attached. The guidance was drawn up by the then HSC's Education Service Advisory Committee in response to enquiries about the safe use of heaters.

Portable gas heaters with liquefied petroleum gas cylinders attached are often used in schools in winter as temporary heating when normal heating systems have broken down or to deal with longstanding heating faults. As outlined above, NUT policy on the use of such heaters is that they should be used only as a temporary measure in emergency situations where no alternative temporary heating systems are available.

The NUT does not consider it to be the teacher's duty to ensure that the school is adequately heated. The NUT advises teachers not to participate in the operation of these heaters in any capacity (i.e. turning heaters on or off, changing gas cylinders, etc) other than in emergency situations (see section 6 of attached HSC guidelines). Heaters should be installed correctly by skilled/trained operators and should be regularly checked and maintained by trained personnel to ensure they are working properly. The HSC's Guidance warns of the need to guard against the dangers of explosion, toxic fumes and fires and urges that plans are drawn up in advance to deal with any emergency and to ensure the heaters are used safely. It also recommends the establishment of proper arrangements to cover the short-term use of such heaters. The attached document may be photocopied and distributed locally.

Action Points for Safety Reps

Make sure that:

- thermometers are available in the school to monitor the situation if classrooms are cold; and
- any problems are taken up as soon as possible in accordance with the advice given above.
- press for minimum temperatures of 18°C, as set out in the Education (School Premises) Regulations 1999. Although these regulations are no longer in place in England, the NUT sees no justification for the removal of the minimum temperature requirement and there is nothing to stop schools from retaining 18°C as a minimum temperature for classrooms.

Appendix:
HSC Guidance on LPG Heaters in Schools

EDUCATION SERVICE ADVISORY COMMITTEE
GUIDANCE ON TEMPORARY USE OF LIQUEFIED PETROLEUM GAS HEATERS IN SCHOOLS

The Health and Safety Commission has endorsed the practical guidance in this document which it commends to the education service.

1. GENERAL PRINCIPLES

1.1 This document is concerned only with the temporary use of portable liquefied petroleum gas (LPG) heaters in teaching/administration blocks of school premises, should there be a breakdown of the normal heating system. Where they have to be used, there is a need to recognise the fire, explosion and toxic risks. Circumstances have to be considered individually because conditions in individual premises vary enormously. This advice, therefore, is of a general nature.

1.2 If heaters are to be used, a written safe system of work should be prepared by a competent person. The employer should ensure that the arrangements detailed in the system of work have been properly implemented.

1.3 Since it is foreseeable that the need for emergency heating will arise from time to time, employers should make advance plans. If, after taking account of all possibilities, it is decided that the heating is to be of the portable LPG variety, several factors should be taken into account. These include: the adequacy of the ventilation, the extent of usage of individual rooms, the existing fire hazard of the building and separate rooms within it and the availability of suitable means of escape. Additional fire fighting equipment may also be required. The Fire Authority will be able to advise on the latter two points. Clear written guidance on emergency procedures should be prepared, e.g., to cover the possibility of a leakage of gas with or without a fire, or a fire arising from extraneous sources (see Section 6).

1.4 Employers should buy equipment only from reputable firms. Where equipment is hired, it should only be hired from a reputable supplier who has adequate facilities to ensure proper maintenance. Equipment, whether purchased or hired, should conform to BS 5258 Part 10 or Part 11 (reference 1 & 2). The manufacturer's or supplier's instructions should be taken into account and should be made available to the users of the equipment.

1.5 Several years may elapse between the need to use the LPG heaters and it is necessary to make suitable arrangements for the long-term storage and maintenance of the equipment. Flame failure devices, atmosphere sensitive devices and gas pressure regulators can deteriorate and should be examined annually by a specialist engineer. The equipment should also be examined following a spell in storage prior to use.

1.6 In general, appliances fuelled by butane rather than propane are preferred for indoor use as butane has a lower pressure. Large industrial mobile heaters, for example those fuelled by 47kg propane cylinders, should not normally be used while premises are being occupied for educational purposes. Even when heaters designed for use with cylinders of no larger than 15kg capacity are used, the possibility of children tampering with the equipment should be realised. Close supervision may be necessary.

2. STORAGE OF CYLINDERS

2.1 Guidance on safe practice in storing and handling LPG cylinders is given in HSE Guidance Note CS4 (reference 3). All cylinders (including empty ones) not connected to an appliance and heating appliances containing an LPG cylinder which are not intended for use immediately should be stored in accordance with the recommendations in the Guidance Note. It is not essential to remove a cylinder from an appliance for short-term storage purposes provided the valves on the appliance and on the cylinder have been turned off. One reason for this is because repeated making/breaking of connections may increase the possibility of a faulty connection being made.

3. KEEPING OF HEATERS IN ROOMS

3.1 Heaters should be brought into a room only when required for immediate use and should be removed when normal heating is restored.

3.2 The number of heaters per room and, where applicable, in fire separated sections of the premises, should be kept to a minimum.

3.3 Each heater brought into a room for use in an emergency should:

(a) be located so as not to affect the means of escape (e.g. it should be placed away from room exits and not in corridors or circulation spaces forming part of the means of escape) and should not be exposed to draughts;
(b) be placed in its allocated position with at least one metre clear space around it except that the heater may be placed adjacent to a wall provided the hot surface faces away from the wall and there are no curtains or other combustible materials within the metre space.

3.4 Special consideration may need to be given to the location of heaters in laboratories, art rooms or workrooms where highly flammable materials may be used. Where a safe location cannot be identified an LPG heater should not be used.

3.5 There should be clear instructions that when a suitable location has been identified the heater should not be moved without the authorisation of a competent person. It may be useful to provide a sketch for use by the fire brigade showing the locations of the LPG heaters in each building.

4. TOXIC RISKS AND VENTILATION REQUIREMENTS

4.1 The use of LPG heaters has resulted in some complaints of nausea, headache and excessive humidity. There is also the possibility of fatigue, dizziness and, in extreme cases, unconsciousness and death from a build-up of carbon monoxide in poorly ventilated rooms. All gas fired appliances produce as combustion products water vapour, carbon dioxide and, usually trace concentrations of carbon monoxide. The amount of carbon monoxide produced depends upon the quality of the input air and on burner design and efficiency. Atmosphere sensitive

4.2 devices required by BS5258 are designed to shut off the gas supply to an appliance before the carbon dioxide content of the surrounding atmosphere exceeds a given level. However, they are not sensitive to carbon monoxide but their operation is such that they should prevent most acute gassings and fatal accidents.

4.2 It is essential that adequate ventilation is provided and maintained in rooms in which heaters are used. This may require windows to be kept open even in cold weather if adjacent fixed open vents are not available.

5. OPERATION AND MAINTENANCE

5.1 Many heaters have surfaces capable of causing burns. Employers should consider the means by which accidental contact with hot surfaces can be minimised and the appropriate precautions which they need to take. Suitable fire guards may be necessary.

5.2 Heaters should be lit and controlled only by a trained and authorised person. Each heater should be checked for leaks and damage before it is lit each morning and when turned off at the end of the day. The check should include a visual examination of the hose, that the cylinder and valves do not appear to be damaged or tampered with, that the connection between hose and cylinder is properly made and that the cylinder is not leaking. At the end of the day it is most important to ensure that the valve is turned off and to check that the cylinder is not leaking.

5.3 The cylinder should be changed only by a trained and authorised person. Before connecting it is essential to check that the connections are compatible and correct for the equipment. Connections should be tightened firmly but should not be over-tightened as this can lead to damage of threads. Where spanners are used for tightening and undoing connections they should be of the correct size.

5.4 The cylinder should be changed only in a well ventilated place, preferably in the open air, but where it is not reasonably practicable to do so, all naked flames and other sources of ignition, e.g. cigarettes and any other heaters in the room should be extinguished. Children should not be present during cylinder changing.

6. EMERGENCY PROCEDURES

6.1 All staff should have received instruction and training appropriate to their responsibility in the event of an emergency. As part of the safe system of work each premises should have written procedures for dealing with a damaged appliance or cylinder, an escape of gas, or a fire. The procedure should include the steps which need to be taken should an incident occur.

6.2 Leakage without fire: if an appliance or cylinder is found to be leaking without the gas igniting, the action taken should include the following, providing, where appropriate, it is safe to do so.

(a) The main valve on the cylinder should be closed to cut off the gas supply.
(b) All possible sources of ignition should be extinguished.
(c) The room should be evacuated other than persons involved in the emergency procedures.
(d) The area should be ventilated.
(e) The appliance/cylinder should be removed to a well ventilated place in the open air, away from sources of ignition.
(f) Unauthorised approach to the appliance/cylinder should be prevented.
(g) If the leak persists the fire brigade should be called and informed that LPG is involved.

6.3 Leakage with fire: the gas from a leaking appliance/cylinder may catch alight. The action taken should include the following:

(a) Anyone who discovers a fire should sound the fire alarm.
(b) Persons not connected with the emergency procedures should be evacuated from the building.
(c) The fire brigade should be called and informed that an LPG cylinder is involved.
(d) The flame should be extinguished IF IT IS SAFE TO DO SO by turning off the valve.
(e) If the flame from the leak is extinguished but vapour continues to escape, action should be taken as outlined in paragraph 6.2 above.
(f) If the flame cannot be extinguished, fire fighting should be left to the fire brigade and the building should be evacuated immediately.

6.4 Fire in the vicinity of an LPG heater: Action should include the following:

(a) The establishment's fire and emergency procedures should be initiated.
(b) IF IT IS SAFE TO DO SO the gas supply should be shut off by closing the main valve.
(c) IF IT IS SAFE TO DO SO the appliance/cylinder should be removed to a well ventilated place, in the open air away from sources of ignition.

REFERENCES

1. BS 5258 : 1980 Safety of Domestic Gas Appliances. Part 10: Flueless Space Heaters (excluding catalytic combustion heaters) (3rd family gases).

2. BS 5258 : 1980 Safety of Domestic Gas Appliances. Part 11: Flueless catalytic combustion heaters (3rd family gases).

3. HSE Guidance Note Chemical Safety 4. The keeping of LPG in cylinders and similar containers. Revised June 1986 edition. HMSO ISBN 0 11 8835394.

NB **HSE Guidance Note Chemical Safety 4 has been superseded by HSE Chemical Sheet No 5 *Small-scale use* of LPG *in cylinders*.**

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