

All Hampstead Hill School Policies are always to be read and considered in conjunction with Equal Opportunities, Race Equality and Inclusion Policies. This Policy of Hampstead Hill School applies to all sections of the school including the Early Years Foundation Stage.

# Hampstead Hill School

## Health and Safety Policy:

### Electricity



## Introduction

Nationally each year approximately 1,000 accidents at work involving electric shock or burns are reported to the Health and Safety Executive (HSE). Around 30 of these are fatal.

Non-fatal electric shock can cause severe and permanent injury. Shocks from faulty equipment may lead to falls from ladders, scaffolds or other work platforms. Those using electricity may not be the only ones at risk; poor electrical installations and faulty electrical appliances can lead to fires which may also cause death or injury to others. Careful planning and straightforward precautions can avoid most of these accidents.

The Electricity at Work Regulations require that the regular inspection, testing and maintenance of electrical equipment be undertaken to prevent risk of death or injury to persons. The regulations apply to **all** electrical equipment used in a work situation. Every type of equipment is included from full electrical installations through fixed electrical equipment to portable electrical appliances. The regulations apply at all voltages from a 400kV overhead line to a battery powered hand lamp. This also includes computer/data networks.

The regulations require that each establishment appoint a 'duty holder' who is responsible for compiling and maintaining an inventory of equipment and test certificates.

## What are the Main Hazards?

The main hazards associated with electricity are:

- Contact with live parts causing shock and burns (normal mains voltage, 230 volts AC, can kill)
- Faults which could cause fire
- Fire or explosion where electricity could be the source of ignition in a potentially flammable or explosive atmosphere, such as in a spray paint booth.

It will also be necessary to consider the conditions of use to determine whether "danger" as defined in the regulations may arise. For example, low voltage equipment used in a flammable atmosphere would create a risk of explosion. This illustrates the point that it is necessary to consider electrical risks in a holistic manner.

To ensure that electrical safety is achieved there are several aspects to consider. These can be related sequentially to the “life” of an electrical system, which may be summarised as follows: -

- Planning and design
- Installation
- Commissioning
- Safe use
- Planned maintenance and fault repairs
- Dismantling at the end of required life.

The Electricity at Work Regulations address themselves to all these aspects by not only specifying requirements for the “hardware”, that is the components used to make up electrical systems, but also for safe systems of work during all the above stages.

The main requirements of the regulations are:

- Ensuring that electrical systems are designed, constructed and installed , so as to prevent danger
- Ensuring that electrical systems are adequately maintained and tested, so as to prevent danger
- Ensuring that work activities carried out on or near electrical systems are carried out in such a way as to prevent danger
- Ensuring that any equipment provided for the protection of persons is suitable for its intended use, adequately maintained and correctly used
- Ensuring that all persons engaged in activities involving electrical systems possess a level of competence commensurate with the nature of the work being undertaken.

## Commissioning Electrical Work

In the majority of cases, repair and building operations which require work on or near electrical systems will be commissioned centrally by the Property Division based at County Hall. Their Electrical Engineers will oversee this work and ensure that contractors with the required level of competence are utilised.

On occasions where other arrangements exist for the commissioning of electrical work, similar standards should be applied in terms of appointing a qualified engineer to carry out the design and a competent contractor to carry out the installation.

## Inspection and Testing

Regular inspection and testing of electrical installations, equipment and appliances represents an essential part of the Health and Safety Policy.

## Residual Current Devices

Residual current devices (RCDs or RCBO) have been fitted in some areas. These are designed to operate in 40 milliseconds to cut off the electricity supply before shock can occur when there is an electrical fault. It is important that any RCDs/RCBOs are tested on a monthly basis or in accordance with the manufacturer's recommendations to ensure they are working correctly. This is achieved by pressing a test button. It is recommended that a person is nominated to complete the test in any establishment where an RCD/RCBO is fitted. Records should be kept of the test results. Additionally, should the RCD/RCBO trip out for any other reason then the date and time that this occurs should also be recorded.

## Portable Electrical Equipment

Generally, portable appliances are described as equipment that has a lead (cable) and plug and which can be moved from place to place. The definition is very wide-ranging and will include the following types of equipment:

- stationary equipment
- Information technology equipment
- Movable equipment
- Portable equipment
- Hand-held equipment.

Specific examples of such equipment are floor cleaners, kettles, heaters, fans, televisions, table lights and extension leads. Equipment that *could* be moved, for example photocopiers, fax machines and desktop computers should also be considered.

Since the consequences of equipment failure can often be fatal, it is vital that procedures exist which afford the greatest opportunity for the detection of faults prior to the hazard being realised.

There are three types of Inspection/testing that are applicable to portable appliances.

1. Visual Inspection by the user
2. Formal visual inspection by an appointed person

3. Regular documented combined inspection and testing by a competent person.

#### *Visual Inspection by the User*

It is recognised that all users of portable electrical appliances require at least basic information to enable them to carry out simple visual checks on equipment. Users should carry out the inspection every time they use a piece of equipment. The following visual checks should be carried out to look for:

- damage, for example cuts, fraying, abrasion (apart from light scuffing) to the cable covering
- damage to the plug, such as cracked casing or bent pins, signs of overheating
- damage to the outer cover of the equipment, damage which could result in access to live parts, evidence of obvious loose parts or screws
- non-standard joints, including taped joints in the cable
- evidence that the outer covering (sheath) of the cable is not being gripped where it enters the plug or equipment (in such cases the coloured insulation of the internal insulation will be showing)
- equipment that has been used in conditions where it is not suitable, for example a wet or dusty workplace
- overheating (burn marks or staining)
- the presence of a Portable Appliance Testing Sticker (confirming successful test).

#### *Formal Visual Inspection by an Appointed Person*

Regular formal visual inspection will take full account of the following:

- The suitability of the environment in which the equipment is used
- Evidence of good housekeeping and the avoidance of poor practices
- The suitability of the equipment and the means of isolation from the electrical supply.

The inspection will include opening the plug and, in such circumstances, training of those charged with the task must reflect this. In addition to the above, the formal inspection will involve checking that:

- A correctly rated fuse is in place
- The cord grip is holding the **outer** part (sheath) of the cable tightly
- The wires, including the earth where fitted, are attached to the correct terminals
- No bare wire is visible except at the terminals
- The terminal screws are tight and
- There is no sign of internal damage, overheating or entry of liquid, dust or dirt.

These checks are **not** applicable to moulded plugs where only the fuse can be checked. Most of these checks are equally effective for detecting faults in extension leads and their plugs and sockets.

It is widely recognised that the majority of failures of portable equipment are directly attributable to incorrectly graded fuses or incorrect terminations within the plug itself. Therefore, these checks represent a crucial aspect of protection for the user.

#### *Documented Inspection and Testing by a Competent Person*

This is a periodic inspection to be carried out by an electrically skilled, trained and competent person with knowledge of the function and safety requirements of the appliance being tested.

The specification for portable appliance testing (PAT) incorporates and goes further than the checks required by the Formal Visual Inspection. As such it will, in most cases, override the requirement for that type of inspection. Where appropriate, the inspection will include the following procedure:

- A visual inspection to identify damage or deterioration to casings, plugs, fuses and cable sheaths
- A test for earth continuity
- A test for insulation failure
- A run test including earth leakage
- The repair of minor defects and replacement of fuses (this will be undertaken at the time of the inspection, where possible).

Test results will be recorded on certificate which will be forwarded to the service receiver. This should be retained.

Equipment found to be defective will be identified and if unsafe will be rendered inoperable.

The results of portable appliance testing should be assessed in detail. If the percentage of failure is low this suggests that equipment is being used properly and that, in general, there is good staff awareness about regular visual inspection of equipment. On the other hand, if there are a number of failures that are easily identifiable through visual inspection this may suggest that staff awareness of the need to conduct visual inspections needs to be raised.

It is the responsibility of the controlling directorate to ensure that this schedule of testing is maintained and appropriately recorded. This will normally be achieved by subscribing to the Electrical Testing Service Level Agreement offered by Property Services. The contractor will affix individual labels to each piece of portable electrical equipment stating the result of the test and the date when it was undertaken. **Any items failing the test must be suitably labelled and taken out of service immediately until such time as a competent person has undertaken suitable remedial maintenance.**

## Personal Electrical Equipment

Employees should not bring personal electrical tools and equipment into the workplace except in exceptional circumstances.

Should a situation arise where the employee feels they require the use of personal equipment they must inform their line Manager of their intention to do so. The line Manager should then decide whether the request is reasonable based on risk assessment. Should the use of the equipment be sanctioned normal standards must be applied in terms of inspection and testing of the equipment.

## Emergency Procedures

### ***In the event of Electric Shock***

The first priority for the rescuer is to avoid becoming a casualty and making the situation worse for other rescuers. It is essential to make sure that it is safe to approach and check if the casualty is still in contact with the source of the shock either directly (through contact with a faulty machine or bare wire) or indirectly (lying on an electrically conductive surface).

The casualty must not be touched directly until it is certain that the electrical supply has been switched off. If a means of switching off the supply is not readily accessible an attempt should be made to remove the casualty from the source by using any dry non-conductive (wood, plastic) implement that is at hand.

A first aider should then be summoned or first aid rendered if staff are trained to do so. The order of priority for treatment is:

- Resuscitation if required
- Placing in the recovery position if the casualty is still unconscious but breathing normally
- Treating any burns

- Treating for shock
- Removal to hospital in all cases where resuscitation was required, the casualty was unconscious, the casualty received burns or developed symptoms of shock
- Passing to the hospital as much information as possible about the incident, including the identification of the power supply involved and the duration of exposure.

## Accident Reporting Requirements

In certain circumstances injury sustained as a result of an electric shock or electric burn is reportable to the Health and Safety Executive under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR).

In summary, the requirement is to report any injury resulting from an electric shock or electric burn leading to unconsciousness or requiring resuscitation or admittance to hospital for more than 24 hours.

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Signed: