Portable Electrical Appliances Policy

1. Introduction

This policy supplements the main Electricity at Work Policy

This policy deals with how the Council addresses the risk from using portable electrical equipment for the safety of employees and visitors to Dacorum Borough Council (DBC) buildings where DBC is the dutyholder.

Tenants within DBC buildings (e.g. Register Office, Library in the Forum) the tenant will be responsible for the purchase, inspection and maintenance of their own portable electrical appliances.

2. Legal Duties

The general duties covering the use and maintenance of work equipment in addition to the Electricity at Work Regulations 1989 are contained in:

- Section 2 and 3 of the Health and Safety at Work etc Act 1974,
- The Management of Health and Safety at Work Regulations 1999,
- The Provision and Use of Work Equipment Regulations 1998,

No DBC staff member is to undertake work (e.g. modification/repair) on portable electrical equipment unless they are employed as a competent person as defined by the Electricity at Work Regulations 1989. Disregarding this aspect of the policy will be considered as gross misconduct due to the risk to themselves and others.

Contractors (including subcontractors) working with portable electrical equipment **must** prior to any work being undertaken provide risk assessments, and method statements including **justification** why 230 volt appliances are being used. Permit to works must be completed prior to commencing work. These must be task and site specific. Phraseology such as *"appropriate PPE", "suitable precautions"* will not be deemed suitable nor sufficient. It is not sufficient for a main contractor to vouch for a subcontractor.

3. Purpose

The purpose of this policy is to assist DBC comply with the legislation and protect the safety of employees, and visitors to DBC buildings where DBC is the duty holder.

4. Scope

This policy applies to DBC staff, including agency, temporary workers, work experience, volunteers and those that may be employed via a Government Scheme that are likely to be exposed to risks from electricity whilst using portable electrical appliances.

5. How DBC Controls of the risks from Portable Electrical Appliances

Portable electrical equipment could cause an electric shock or burn, or fire due to damage, wear or misuse. e.g. electric drills, extension leads, office equipment, portable grinders, pressure water cleaners, floor cleaners, electric kettles and similar equipment used in all environments.

The maintenance plan described in this policy is based on a straightforward, inexpensive system of user checks, formal visual inspection and testing. User checks and formal visual inspections can be carried out by a competent employee.

In this context 'competent' means having suitable training, skills and knowledge for the task to prevent injury to themselves or others.

Portable electrical equipment should only be used in accordance with the manufacturer's instructions, for its intended purpose, and in the environment it was designed and constructed for. If used in external environments it should have the appropriate IP rating (Ingress Protection – See Table 2).

There is no legal definition of portable equipment. However, for this policy it means equipment that is intended to be connected to a generator or a fixed installation by means of a flexible cable and either a plug and socket or a spur box, or similar means. This includes equipment that is either hand-held or hand-operated while connected to the supply, intended to be moved while connected to the supply, or likely to be moved while connected to the supply.

Extension leads, plugs and sockets, and cord sets that supply portable equipment are classified as portable equipment because they operate in the same environment and are subject to the same use as the equipment they serve.

Earthed equipment (Class I)

This equipment relies on the metallic (exposed conducting) parts of the equipment being effectively earthed. If this earth connection is lost there is a possibility of the exterior of the equipment becoming live, with a potentially fatal result. Anyone touching live metal will be in contact with electricity.

Double insulated equipment (Class II)

This equipment (which includes double insulated equipment marked ) is constructed with high-integrity insulation and does not have nor need an earth

connection to maintain safety. If you cannot see this symbol, you should assume that the electrical equipment is a Class I appliance.

Double insulated appliances should be purchased in preference to Class I appliances. This should be detailed within the risk assessment.

The Regulations do not specify what needs to be done, by whom or how frequently (for example, they do not make it a legal requirement to test all portable electrical appliances every year). This allows the dutyholder to select precautions appropriate to the risk rather than having precautions imposed that may not be relevant to a particular work activity.

Note: that even if a contractor is used to carry out maintenance procedures, the dutyholder still has overall responsibility for complying with the law.

Maintenance plan

Each DBC site is different, as is the working environment. The vehicle workshop or the CSG hangar is very different to the Forum. Therefore each site must devise their own inspection frequency for its portable equipment based on the nature and the environment that the portable equipment is being used.

Control of risks arising from the use of portable electrical equipment should be based on a risk assessment. Factors to consider when making the risk assessment include:

- type of equipment – the vast majority of which will be either earthed equipment or double insulated equipment;
- whether it is hand-held or not. Equipment that is held by hand or handled when switched on will present a greater degree of risk because, if it does develop a dangerous fault, the person holding it will almost certainly receive an electric shock;
- manufacturer's recommendations;
- initial integrity and soundness of the equipment;
- age of the equipment;
- working environment in which the equipment is used (eg wet or dusty) or likelihood of mechanical damage;
- frequency of use and duty cycle of the equipment;
- foreseeable misuse of the equipment;
- effects of any modifications or repairs to the equipment;
- analysis of previous records of maintenance, formal visual inspection and combined inspection and testing.

Effective maintenance of portable electric equipment can be achieved by a combination of:

- checks by the user;
- formal visual inspections by a competent person;
- where necessary a combined inspection and test, also known as a portable appliance test (PAT), by an electrically competent person.

The aim of these checks is to determine whether the equipment is fully serviceable or whether remedial action is necessary to make sure it is safe to use.

User checks (employees)

The person using the equipment should be encouraged to look at it before use and check for signs that it may not be in sound condition, for example:

- damage (apart from light scuffing) to the supply cable, including fraying or cuts;
- damage to the plug or connector, e.g. the casing is cracking or the pins are bent;
- inadequate joints, including taped joints in the cable;
- the outer sheath of the cable is not effectively secured where it enters the plug or the equipment. Evidence would be if the coloured insulation of the internal cable cores were showing;
- the equipment has been subjected to conditions for which it is not suitable, eg it is wet or excessively contaminated;
- damage to the external casing of the equipment;
- loose parts or screws;
- evidence of overheating (burn marks or discolouration).

These checks also apply to extension leads, plugs and sockets. A user check should be made when the equipment is taken into use and during use. Any faults should be reported to the relevant line manager and the equipment taken out of use immediately.

Formal visual inspections (restricted to competent employees)

An important part of a maintenance regime is the formal visual inspection. Such inspections are necessary because they can reveal most potentially dangerous faults. They can normally be carried out by a member of staff who has sufficient information and knowledge of what to look for, what is acceptable, and who has been given the task of carrying out the inspection (that is, they are competent to do the task).

To avoid danger, trained people should know when the limit of their knowledge and experience has been reached. Simple, written guidance relating to the formal visual inspection can be produced that summarises what to look for and which procedures to follow when faults are found or when unauthorised equipment is found in use. This guidance can also help equipment users.

As part of the visual inspection, you should also consider whether:

- the electrical equipment is being used in accordance with the manufacturer's instructions;
- the equipment is suitable for the job;
- has there been any change of circumstances;
- the user has reported any issues.

Although additional checks are detailed within HSG107 *"Maintaining portable electrical equipment"* which include removing the plug cover this should **not** be done, unless the member of staff has been suitably trained to the do so.

Additional checks which include removing the plug cover must **only** be carried out by competent staff named in the risk assessment. These checks may include:

- there are no signs of internal damage, overheating or water damage to the plug;
- the correct fuse is in use and it is a proper fuse, not a piece of wire, nail etc
- the wires including the earth, where fitted, are attached to the correct terminals (see Figure 1);
- the terminal screws are tight;
- the cord grip is holding the outer part (sheath) of the cable tightly; and
- no bare wire is visible other than at the terminals.

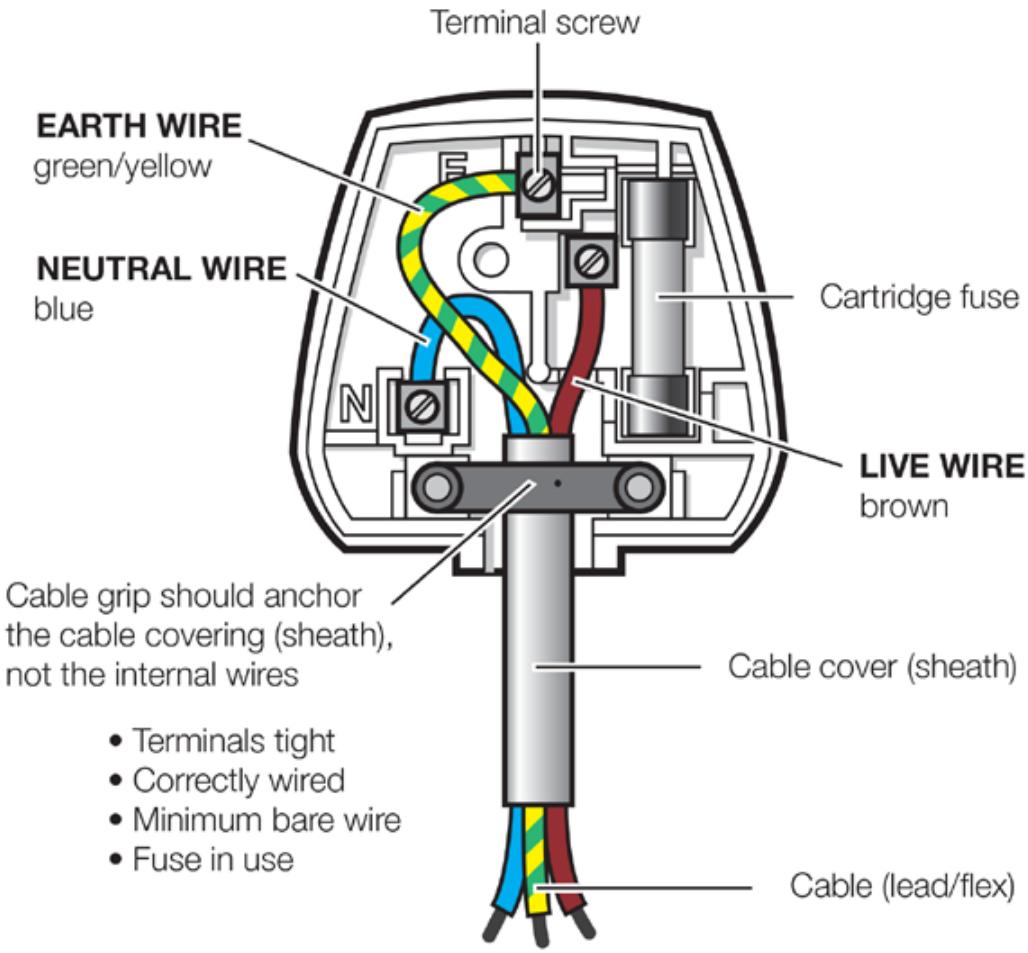

Figure 1: Correctly wired plug.

For moulded plugs the fuse can be checked. The formal visual inspection should **not** include taking the equipment apart. This should be confined, where necessary, to the combined inspection and testing.

If in doubt regarding the safety of equipment it must be taken out of service and only brought back into service when confirmed safe to do so after passing a combined inspection and test.

The formal visual inspections should be carried out at regular intervals. The period between inspections can vary considerably, depending on the type of equipment, the conditions of use and the environment and should be guided by the risk assessment.

Combined inspection and test (PAT)

The checks and inspections outlined above should reveal most potentially dangerous faults. However, some faults, such as loss of earth integrity (e.g. broken earth wire within a flexible cable), deterioration of insulation integrity, or contamination of internal and external surfaces, cannot be detected by visual examination alone. Such faults can only be reliably detected by a combined visual

inspection and test. This should be carried out periodically to back up the checks and inspections and is likely to be justified:

- whenever there is reason to suppose the equipment may be defective and this cannot be confirmed by visual examination;
- after any repair, modification or similar work; or
- at periods appropriate to the equipment, the manner and frequency of use and the environment.

The inspection carried out in conjunction with testing should usually include checking:

- the correct polarity of supply cables;
- the correct fusing;
- effective termination of cables and cores;
- that the equipment is suitable for its environment.

This combined inspection and testing requires a greater degree of competence (in terms of knowledge, training and experience) therefore this is contracted out. To obtain the details of the current contractor contact Building Services who will provide you with the most recent contractor details.

People testing portable electrical equipment should be appropriately trained. It is the employer's duty to make sure that they are competent for the work they are to carry out.

> Level 1: A person not skilled in electrical work routinely uses a simple 'pass/fail' type of portable appliance tester where no interpretation of readings is necessary. The person would need to know how to use the test equipment correctly. Providing the appropriate test procedures are rigorously followed and acceptance criteria are clearly defined, this routine can be straightforward.

It is extremely important that when the combined inspection and testing is scheduled that line managers ensure that all portable equipment used by their staff is made available for inspection, this includes equipment locked in cupboards and filing cabinets.

Equipment that fails a user check, formal visual inspection or a combined inspection and test should not be used until it is repaired by a competent person. If it is not economically viable to repair the equipment it must be disposed of via the correct waste stream.

Line managers should take effective steps to ensure that the equipment is not used again until it is repaired by a person competent to carry out the task (i.e. the defective equipment should be labelled as *'faulty – do not use'* and the plug taped securely to the equipment). If the equipment is to be disposed of, this must done by via the appropriate waste channel. Disposal of waste electrical products is not within the scope of the policy.

Maintenance, test records and labelling

There is no explicit legal requirement to keep maintenance logs for portable electrical equipment. However, a suitable log is useful as a management tool for monitoring and reviewing the effectiveness of the maintenance plan. However the Management of Health & Safety at Work Regulations 1999 as amended requires the findings of the risk assessment to the recorded.

After a combined test and inspection the equipment will be labelled to indicate when it was conducted and whether it passed the inspection and test and is now safe to use.

If a label is applied then there should not be a next test due date on it. The person carrying out the testing should not assess when the next test is due as this decision should be made by the dutyholder based on a risk assessment.

Frequency of examinations

Determining the frequency of inspection and testing is a matter of judgement by the dutyholder, and should be based on an assessment of risk. Table 1 provides some guidance on this issue. The minimum frequencies in Table 1 should be used, unless there is compelling reason to increase the frequency of inspection and testing.

Unauthorised equipment

Staff **shall not provide** or use their own portable electrical equipment at work unless it has been tested and passed the combined inspection and test by the Council's approved contractor. Using unauthorised portable electrical equipment will be considered as mis-conduct.

New Equipment

It is recognised that new equipment will be purchased between the scheduled combined inspection and test. The initial integrity (safety) of new work equipment when first supplied is covered by: section 6 of the Health and Safety at Work etc. Act 1974.

Only brand new equipment (out of the box) is permitted to be used without passing the combined inspection and test. Such equipment must be labelled *"New"* and contain the date it came into service, the name and signature of the line manager authorising the use of the equipment.

Repair and replacement

The repair of most portable electrical equipment requires specialist knowledge and expertise if the faulty or damaged equipment is to be restored to the necessary safe condition. Repairs should any be undertaken by competent people having regard to information provided by the manufacturer.

The decision to repair or replace equipment will be down to the service area on a case by case basis. For more specialist equipment such as noise or pollution monitoring equipment it may be that a repair is made. Prior to bringing the equipment back into service it must be accompanied with documentation to demonstrate that it is safe to use.

For less expensive items such as a desk fan or kettle then a replacement will be made.

Where flexible cables have been in use for a long time, it is better to replace rather than repair them because conductor wires, insulation and sheathing materials deteriorate.

6. General Duties of Employees

All staff must

- Undertake pre-user checks when using portable electrical appliances
- Report defective electrical equipment to their line manager
- Only use electrical equipment they are authorised to use (there is tacit consent to use office equipment)
- Only use electrical equipment (other than office equipment) that they are competent to use either trained by DBC, or a previous employer
- Not to use their own personnel electrical equipment.

Line Managers

- Act on reports of defective electrical equipment from staff.
- Ensure defective equipment is taken out of service, label the item as *'faulty – do not use'* and ensure the plug taped securely to the equipment.
- When required ensure that all portable electrical equipment used by staff is made available for the combined inspection and test.
- For staff given the responsibility of undertaking formal visual inspections ensure that they have been suitably trained.

Group Managers

- Ensure risk assessments identify the hazards from the use portable electrical equipment and the control measures detail above are incorporated into the risk assessment particularly the formal visual inspection and combined inspection and test.

Table 1 Suggested initial maintenance intervals

Type of business		**User checks (employees)**	**Formal visual inspection (Competent employees)**	**Combined inspection and test (External Contractor)**
Battery operated equipment (less than 40 V)		No	No	No
Extra low voltage (less than 50 V ac), telephone equipment, low-voltage desk lights		No	No	No
Construction	110V equipment	Yes, weekly	Yes, monthly	Yes, before first use on site then 3-monthly
	230V equipment	Yes, daily/every shift	Yes, weekly	Yes, before first use on site then monthly
	Fixed RCDs	Yes, daily/every shift	Yes, weekly	Yes, before first use on site, then 3-monthly (portable RCDs – monthly)
	Equipment site offices	Yes, monthly	Yes, 6-monthly	Yes, before first use on site then yearly
Heavy industrial/high risk of equipment damage (not construction)		Yes, daily	Yes, weekly	Yes, 6–12 months
Light industrial		Yes	Yes, before initial use then 6-monthly	Yes, 6–12 months
Office information technology rarely moved, e.g. desktop computers, photocopiers, fax machines		No	Yes, 2–4 years	No if double insulated, otherwise up to 5 years
Double insulated (Class II) equipment moved occasionally (not hand-held), eg fans, table lamps		No	2–4 years	No
Hand-held, double insulated (Class II) equipment, eg some floor cleaners, some kitchen equipment		Yes	Yes, 6 months – 1 year	No

Earthed (Class I) equipment, eg electric kettles, some floor cleaners	Yes	Yes, 6 months – 1 year	Yes, 1–2 years
Cables, leads and plugs connected to Class I equipment, extension leads and battery charging equipment	Yes	Yes, 6 months – 4 years depending on type of equipment it is connected to	Yes, 1–5 years depending on the equipment it is connected to

Table 2: Ingress Protection

IP Ratings - what they mean.

First Digit (intrusion protection)	Second Digit (moisture protection)
1. No special protection 2. Protection from a large part of the body such as a hand (but no protection from deliberate access); from solid objects greater than 50mm in diameter. 3. Protection against fingers or other object not greater than 80mm in length and 12mm in diameter. 4. Protection from entry by tools, wires etc, with a diameter of 2.5 mm or more. 5. Protection against solid bodies larger than 1mm (eg fine tools/small etc). 6. Protected against dust that may harm equipment. 7. Totally dust tight	1. No protection. 2. Protection against condensation 3. Protection against water droplets deflected up to 15° from vertical 4. Protected against spray up to 60° from vertical. 5. Protected against water spray from all directions. 6. Protection against low pressure water jets (all directions) 7. Protection against strong water jets and waves. 8. Protected against temporary immersion. 9. Protected against prolonged effects of immersion under pressure.