

Estates Office Code of Practice

Portable Electrical Appliance Inspection and Testing

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1. General Health and Safety Policy

The University of Warwick undertakes to comply with all statutory health and safety requirements. Details of the Health and Safety accountabilities and responsibilities are outlined within the **University's Health and Safety Policy** document. **The Leadership and Management of Health and Safety** document complements the **Health and Safety Policy**, insofar as it provides further information for those with health and safety responsibilities on what behaviours are expected of them in relation to their respective roles in order that commitment to health and safety can be demonstrated and the safety culture at Warwick enhanced.

2. Policy on Portable Electrical Appliance Inspection and Testing

The Electrical Safety Policy states:

- Only a suitably qualified and competent person may work on or near electrical systems or equipment, especially those involved in design, construction and operation of electrical systems (including purpose-built research apparatus): those who do not possess the required knowledge or experience must be under an appropriate degree of supervision, having regard to the nature of the work.
- Newly acquired electrical equipment must conform to CE/British Standard certification and marking requirements prior to being used on campus, be fit for purpose and free from latent defects.
- Portable Appliances (i.e. movable electric appliances which can be connected to an electrical supply through the use of a lead and plug), must be visually inspected in accordance with the University's Portable Appliance Testing (PAT) arrangements as detailed on the University's Health and Safety or the Estates Department web pages. Good working practice would be to visually inspect the equipment before each use and, only if necessary, formally tested, on a risk based periodicity, in line with the HSE guidance..

3. Responsible Parties

In addition to the roles and responsibilities identified in the University's Health and Safety Policy document, the following apply to this code of practice.

3.1 Director of Estates

The Director of Estates is responsible for providing an electrical inspection and testing service which will enable Heads of Department to fulfil their responsibilities in this regard. The service may be provided by directly employed staff or may be contracted in from a competent third party service provider. The service provided shall include advice on record keeping of the results of the tests on a standard inventory format, as shown in *Appendix A - Warwick Departmental Equipment Inspection and Test Record form*.

3.2 Estates Office Electrical Services Maintenance Manager

The Estates Office Electrical Services Maintenance Manager is responsible for advising the University Health and Safety Executive Committee and members of the University on the arrangements for Portable Electrical Appliance Inspection and Testing.

The Electrical Services Maintenance Manager and Electrical Testing Officer are responsible for supporting the Director of Estates in relation to the day to day electrical safety management and for the maintenance and communication of the detailed arrangements, instructions and guidance. They will also act as the competent person for the University Electrical related issues. The Electrical Services Maintenance Manager and Electrical Testing Officer are also responsible for ensuring that records of maintenance and testing carried out on fixed installations are maintained, and, through close work with departments, ensuring that PAT records are also maintained.

3.3 Heads of Department

Heads of Departments (for all academic, commercial and professional/administrative services departments) are responsible for the health and safety of those who might be affected by activities in their respective areas of responsibility.

They may delegate the implementation of the Departmental arrangements for Portable Electrical Appliance Inspection and Testing to a nominated person within their department although they retain the responsibility for ensuring that Inspection and Testing is carried out and remedial action is taken where necessary.

3.4 Nominated persons

The nominated person will have the responsibility for the management of the Departmental PAT as defined by the Head of Department. The nominated person shall have the correct level of electrical competence, as dictated by the level of risk within their particular department.

3.5 Staff Members

All Staff have a duty to take reasonable care for the health and safety of themselves and others who may be affected by their work. They also have a duty to comply with the University's arrangements for health and safety.

3.6 Students

Students, are responsible for undertaking visual inspections of their personal electrical equipment. The University guidance of the inspections procedures are in:

*Appendix C - User Checks; and
Appendix D – Formal Visual Inspections*

3.7 Equipment owners (Shared spaces and centrally timetabled areas)

The safety of electrical equipment in shared spaces are the responsibility of the equipment owner. Equipment owners are responsible for the management of the PAT of their equipment.

3.8 Portable Appliance Testers

Members of staff who carry out Portable Electrical Appliance Inspection and Testing do so on behalf of the University and do not carry any personal liability for the results obtained, as long as they carry out the testing in accordance with the training they have received; (refer 4.12).

4. Arrangements

4.1 Introduction

A Portable Electrical Appliance is, literally, any electrical equipment capable of being carried and, in general, connected to the mains supply by a flexible lead and a plug. The definition includes appliances with their own power sources, e.g., "intrinsically safe" equipment used in potentially explosive environments and equipment designed to operate at 110 volts. The definition does not include equipment which is "hard" wired, e.g., heavy equipment supplied by a fixed, armoured, power cable, which is tested using other regimes.

Examples of different types of Portable Electrical Appliances are shown in *Appendix B - Examples of Portable Appliances*

Each University Department will be responsible for making its own inspection and testing arrangements in line with the two options shown below in section 4.3. Some will have the technical resources to carry out these arrangements. Those who do not shall contract the services of the Estates Office approved electrical testing contractor.

Electrical equipment must be maintained in order to prevent danger. Portable Electrical Appliances must be regularly inspected and tested by Competent Persons in line with guidance from the Health and Safety Executive (HSE) and the Institution of Engineering and Technology (IET) to ensure that they can continue to be used safely. What sorts of inspections and tests are required, and how often they need to be carried out will depend on the type of equipment and where it is being used. This is covered in *Appendix F - Frequency of Inspection and Testing*.

There are three elements to a robust inspection and testing regime, which include:

- User Checks
- Formal Visual Inspections
- Combined Inspection and Test,

Apart from the user check, the test results will be recorded to allow for future comparison, for written identification of defects to be remedied and to provide information for an assessment of risk.

4.2 Department responsibility

Heads of Department are responsible for;

- a) ensuring a management process is in place to ensure the tests are satisfactorily carried out,
- b) the person undertaking the departmental testing has the correct skill level to undertake the tests required (see 4.12) and has;
 - i. the right equipment to do the tests
 - ii. the ability to use this test equipment properly
 - iii. the ability to properly understand the test results
- c) ensuring that electrical equipment brought into their departments are fit for purpose and free of latent defects,
- d) maintaining an inventory of portable electrical equipment,
- e) ensuring that items are available for inspection and testing,

- f) any remedial action is promptly taken,
- g) retaining records of inspections and tests,
- h) retaining test equipment calibration records.

Heads of Department must ensure their departmental portable electrical equipment is tested, by;

- a) a suitably trained (competent) person employed within their department, or
- b) the Estates Office approved testing contractor.

If the Head of Department elects to use the Estates Office approved testing contractor, the Department are responsible for;

- a) raising the purchase order for the service,
- b) contacting the contractor to schedule the testing,
- c) making the access arrangements with the contractor,
- d) making the electrical equipment available to the testing contractor,
- e) chaperoning the testing contractor during the tests,
- f) payment of the contractor's invoice

4.3 User Checks

These can be carried out by the user, without any formal training. For University owned electrical equipment issued to students, the person issuing the equipment to the student for their use is responsible for ensuring the appropriate user checks are undertaken. User checks require an examination of the equipment and cables to spot any obvious signs of damage, contamination, chafing, burning or intermittent/incorrect operation, refer to appendix C

4.4 Formal Visual Inspection

These can be performed by a suitably trained person and involves a more detailed and systematic visual check, with any findings being recorded, refer to appendix D

4.5 Combined Inspection and Test

The Combined Inspection and Test can be performed by a suitably trained person, with suitable equipment, and requires a full formal inspection followed by a test carried out on a suitable piece of test equipment. Some departments will have the suitably trained staff (section 4.12) to do the tests. Those who do not shall contract the services of the Estates Office approved contractor, details of the tests are in appendix E.

4.6 Testing after repairs

Equipment which is repaired at the University between annual tests must be satisfactorily re-tested (Electrical Tests) following repair before it is put back into service.

Equipment which is repaired outside the University, or by Service Engineers (who are not University employees) on University premises, should be tested by the engineer carrying out the work. It should be made clear in any associated correspondence that this is necessary and expected.

4.7 Suppression Capacitors and Neon Lamps

Some items of equipment are fitted with large suppression capacitors, or high brightness neon lamps, between the supply and earth conductors, which can cause an apparent Insulation (Flash) Test failure. In such instances the help of an electrically qualified person should be sought.

4.8 Extension Cables

The use of extension leads should be avoided where possible.

If extension leads must be used, it is recommended that they have 3-core leads (including a protective earthing conductor). If the lead exceeds 12m in length, it should be protected by a 30 mA RCD manufactured to BS7071.

Extension cables can be tested by plugging an item of equipment that has been satisfactorily tested into the extension cable socket and re-testing the cable and equipment as one item. However, this method of testing may be unsatisfactory for long extension cables due to the additional resistance offered by the cable. The tests should be repeated for each socket of a multi-socket extension cable.

4.9 Schedule of Inspection and Testing

Details of inspections and testing are in:

Appendix C - User Checks; and

Appendix D - Formal Visual Inspections

Appendix E - Combined Inspection and Tests

Appendix F - Frequency of Inspection and Testing

4.10 Recording of Inspection and Testing Results

A dated test label must be affixed to the appliance (and to the plug, if the lead is detachable). The label should show the following:

- PASS or FAIL
- Test given (Formal Visual Inspection or Combined Inspection & Test)
- Unique identification for the equipment (e.g. Departmental Inventory number)
- Identity of the Competent Person
- The due date of the next test.

A record must be kept by the equipment owner of the inspection and test results, either as a paper records (see *Appendix A - Warwick Departmental Equipment Inspection and Test Record form*) or computer records.

4.11 Remedial Action (faults)

If inspection and testing show the appliance is faulty, **it is unsafe and it must be taken out of service until remedial action is taken.**

If a Test Person suspects that an item that has failed the tests may be used illicitly before repair, the item should be either placed in a secure location (i.e. locked away) or the supply plug removed from the cable, or in extreme cases the cable removed, to deter future use.

If an item of electrical equipment cannot be repaired, or is not required any more, it must be disposed of in accordance with the University policy on the disposal of Waste Electrical and Electronic Equipment.

4.12 Training

Inspection and Testing must be carried out by Competent Persons i.e. staff who have received suitable and sufficient training.

The decision as to whether an individual is competent to undertake a particular task is left to the department, however guidance may be obtained from the Estates Office. It is necessary to weigh up the job's skill content against the individual's attributes, taking into account his or her:

- electrical knowledge,
- electrical experience,
- understanding of the system/equipment to be worked on,
- understanding of the hazards which could arise, and,
- ability to recognise at any time whether it is safe to continue to work.

Both formal theoretical training and practical "on the job" training, using the test equipment are normally necessary. The former can be arranged with a training provider. The latter carried out within the Department under direct supervision of a Competent Person or by a qualified instructor from a test equipment supplier.

The Competent person should have access to the following documents:

University Code of Practice: Safe Working on Low Voltage Electrical Systems
IET: Code of Practice for In-service Inspection and Testing of Electrical Equipment
HSE: HS(G)107: Portable Appliance Testing.

Where external electrical contractors are employed, University staff should only use the Estates Office approved contractors who have undergone a rigorous evaluation of their competence.

5. References

IET: Code of Practice for In-service Inspection and Testing of Electrical Equipment, IET 2012, ISBN 978-1-84919-926-0

Maintaining portable and transportable electrical equipment
HS(G)107, HSE2013 ISBN 978-0-7176-6606-5.

Maintaining portable electrical equipment in low-risk environments
Leaflet INDG236 (rev3) HSE Books 2013 www.hse.gov.uk/pubns/indg236.htm.

Memorandum of guidance on the Electricity at Work Regulations 1989
(EAW memorandum) HSR25, HSE ISBN 978 0 7176 6636 2

Health and Safety regulation...a short guide

HSC13REV1 www.hse.gov.uk/hse/public/saleproduct.jsf?catalogueCode=HSC13REV1
Management of health and safety at work Approved Code of Practice
L21, HSE 2009 ISBN 0 7176 2488 9.

Safe Use of Work Equipment - Provision and Use of Work Equipment Regulations (PUWER) 1998 - Approved Code of Practice and Guidance,
HSC ISBN 0 717 61626 6.

Appendix A – Warwick Departmental Equipment Inspection and Test Record form

Department:

Contact:

Test Equipment Used: **Serial Number:**

Tested By: **Date:**

Item						Testing		Inspection	Status
Serial Number	Description	Location	Operating Voltage (Volts)	Power Rating (Watts)	Fuse Rating (Amps)	Insulation Resistance (Pass/Fail/N/A)	Earth Continuity (Pass/Fail/N/A)	Plug, cable, body (Pass/Fail)	OK to use? (Yes/No)

Appendix B – Examples of Portable Appliances.

(For use with the Initial Testing Frequency Table):

(S) Stationary– Mass exceeds 18kg. No carrying handle			
Fridge	Washing Machine	Freezer	Laboratory Oven
(IT) Information Technology & Business – Computers and certain equipment used in offices			
Computer	Answering machines/faxes)	Trimmers	Telephones
Photo-copier	Mail processing machines	Typewriters	Printers
VDU	Electric plotters	Data terminals	Power packs
(M) Movable - 18kg or less in mass. Not fixed in place. OR has handles, wheels, castors to facilitate movement			
Air conditioning unit	Water baths		
(P) Portable - Less than 18kg in mass. Intended to be moved in operation OR can be easily moved.			
Toaster	Food mixer	Vacuum cleaner	Fan heater
Angle poise lamps	Kettles	Drills	Hotplates
Toasters	Vacuum cleaners	Floor polishers	Floor washers
Electric fires	Fan heaters	Food mixers	Darkroom enlargers
Darkroom dryers and	Variacs, etc.	Extension lead	
(H) Hand held - Intended to be held in the hand during normal use.			
Drills	Laboratory air-dryers	Heavy-duty soldering	Inspection lamps
irons			
Domestic irons			
(F) Fixed Electrical equipment (equipment is permanently electrically connected to a fused connection unit or an electrical isolator) and tested during the fixed wire testing			
Items can include:			
Electrical Cookers	Commercial Fridges/Freezer	Cooker Hobs	Point of Use Water
Heater Hand Driers			

It is most important that all items of hand-held portable equipment are tested because faults in this type of equipment account for a high proportion of electrical accidents.

CLASS I appliances rely on earthing of the conductive case and one layer of insulation covering its live internal parts for protection against electric shock.

CLASS II appliances are "double insulated", i.e. they rely on two layers of insulation between live internal parts and the user for protection against electric shock.

Competent Person is a person who is employed or contracted by the University who has received suitable and sufficient training in Portable Electrical Appliance Inspection and Testing (see Section 4.12)

Appendix C – User Checks

This is a simple visual check performed by the user of the equipment, or a Facilities Manager/Building Manager giving equipment out to students.

User checks are not recorded unless a defect is noticed.

The following schedule is recommended:-

Component	Common fault to look for
Mains Lead	Cuts Fraying Too long/short Taped joints
Plug	Is flex secured in gripper Shows signs of overheating Cracked casing
Socket outlet or Mains Lead outlet	Shows signs of overheating Cracked casing
Appliance	Does it work? On/Off switch functioning Cracked casing Chemical or corrosion damage to casing
Environment	Suitability for the environment it will be used in
Job	Suitability for the work to be

Appendix D – Formal Visual Inspection

This is a more detailed user check which is recorded. Since over 80% of electrical faults are discovered by visual inspection, this is the most important element of Inspection and Testing.

The following schedule is recommended.

Component	Common fault to look for
Plug	<ul style="list-style-type: none"> cracked casing bent pins incorrectly rated fuse incorrectly connected wires loose connections loose cable clamp
Mains Lead	<ul style="list-style-type: none"> cuts, fraying, brittle kinked, coiled taped joints overloaded (overheated) male connector (if fitted) non-standard (IEC 320, BS4491, CEE22) not secured by grommet/clamp on appliance
Appliance	<ul style="list-style-type: none"> suitability for the environment or work being undertaken damage/faulty operation of off/on switch damage to casing loose parts missing screws evidence of overheating evidence of moisture missing double insulation mark <input type="checkbox"/> on insulating casing (where appropriate) accessible fuse holders: damage or removal of carrier permits live part to be touched exposed output connections have marked voltage rating > 50V

Appendix E – Combined Inspection and Tests

Equipment

A commercially available Portable Appliance Tester (PAT) is required for electrical testing of robust appliances. Some PATs have a facility for testing 110 V equipment. A PAT SHOULD NOT BE USED on very sensitive electronic equipment, as permanent damage may be caused by the high test voltages and currents.

The PAT should have a numerical readout for test results.

PATs should be calibrated annually. Health and Safety Services require a copy of the calibration certificate.

Tests

The following schedule is recommended, carried out in the order as written

(Greater detail is provided in the *IET: Code of Practice for In-Service Inspection and Testing of Electrical Equipment*, including pass/fail criteria)

Class 1 Appliances

- Earth Continuity / Bonding Test
This test is for checking the earth lead continuity and earth connection (or bonding) to the metal casing of an appliance.
- Insulation Test
This test checks the integrity of the appliance's insulation.
For Class 1 appliances the test voltage is applied between the appliance's mains supply plug P (phase) and N (neutral) pins connected together, and the E (earth) pin which is held at earth potential.
- Earth Leakage Test
This test shows the level of leakage current in the appliance by monitoring the difference in currents flowing in the phase and neutral connections; any difference must be flowing to earth. This provides a useful way of predicting approach of appliance breakdown since the level of leakage current is a guide to the condition of insulation. Since many appliances are designed with earth leakage, this test is not mandatory; faults are indicated in the Insulation Test described above.
- Flash Test (Dielectric strength test)
These tests are no longer carried out during PAT testing.
- Operation V/A Test (OPTIONAL)
This test indicates that the appliance is in good working order and not drawing excessive current.

Appendix E (cont) – Combined Inspection and Tests

Class II Appliances

Test as for Class I Appliances, except with the omission of the Earth Continuity / Bonding Test.

Very Sensitive Electronic Equipment

Earth Continuity / Bonding Test ONLY.

Do NOT use a PAT device.

Using a multimeter able to read to 300 milliOhm, the resistance between the earth pin and any exposed metal (not signal sockets) should be less than 300 milliOhm.

Three phase equipment

The inspection and testing of three phase equipment is a specialist task which must be carried out, either:

- under service contract or
- by Estates Office, Electrical Maintenance Section.

Extension Leads

These should be tested, by connecting, in turn, to each of the sockets an electrical appliance that has already been shown to be electrically safe, and then performing the usual electrical tests (depending on whether the extension lead and appliance are class 1 or class 2)

Power leads

These should be tested by being connected to an electrical appliance that has already been shown to be electrically safe, and then performing the usual electrical tests (depending on whether the extension lead and appliance are class 1 or class 2)

Appendix F - Frequency of Inspection and Testing

Deciding on the frequency of testing and inspection is a matter of judgement, and should be based on an assessment of risk. This can be taken as part of the assessment of risks under the Management of Health and Safety at Work Regulations 1999.

The factors to be considered when choosing an appropriate testing frequency are:

- the environment – equipment used in benign environments will suffer less damage than equipment used in an arduous environment.
- the users – if equipment is likely to receive unreported abuse, more frequent inspection and testing may be required.
- the equipment construction – the safety of class 1 equipment is dependent on the fixed electrical installation; The safety of class 2 equipment is not. **If equipment is known to be Class 2, in a low risk environment, such as an office, recorded testing (but not inspection) may be omitted.**
- the equipment type – appliances which are hand held are more likely to be damaged than fixed appliances.

In order to provide a basis for the initial testing regime, the following testing frequencies are recommended by the IET in accordance with HSE guidance. (Figures show interval in months, unless otherwise indicated). It is expected that some Departments may wish to vary these testing frequencies to better fit in with the diverse equipment and locations they have. Any such variation **MUST** be based on risk assessment and the justification recorded in writing.

Area / Use	Type of Equipment <i>Note (1)</i>	User checks <i>Note (2)</i>	Class I		Class II <i>Note (4)</i>	
			Formal Visual Inspection <i>Note (3)</i>	Combined Formal Visual Inspection & Electrical Tests <i>Note (5)</i>	Formal Visual Inspection <i>Note (3)</i>	Combined Formal Visual Inspection & Electrical Tests <i>Note (5)</i>
Building, construction or maintenance work.	S,IT,M#,P#,H#	None	3	6	3	6
Manufacturing, Commercial kitchens, Cleaning Equipment	S, IT	Weekly	None	12	None	12
	M	Before use	6	12	6	12
	P, H	Before use	3	6	3	6
Used by Public (other than students)	S, IT	<i>Note (6)+</i>	1	12	3	12
	M, P, H	<i>Note (6)+</i>	Weekly	6	1	12
Teaching / Research Laboratories	S, IT	Weekly+	None	12	12	48
	M, P, H	Weekly+	4	12	4	48
Accommodation, Offices, Computer Rooms, Lecture Theatres	S, IT	None	24	48	24	None
	M, P	Weekly	12	24	24	None
	H	Before use	6	12	6	None

Appendix F (cont) - Frequency of Inspection and Testing

Notes:

- S Stationary equipment
 - IT Information technology and Business Equipment
 - M Moveable equipment
 - P Portable equipment
 - H Handheld equipment
 - F Fixed equipment
- User checks are not recorded unless a fault is found
The formal visual inspection may form part of the combined inspection and tests when they coincide, and must be recorded
If class of equipment is not known, it must be tested as CLASS I
The results of combined inspections and tests are recorded
For some equipment a daily check may be necessary
- + User check performed by the Facilities Manager/Building Manager/member of staff
 - # 110 V earthed centre tapped supply. 230V portable or hand held equipment must be supplied via a 30mA RCD and inspections and tests carried out more frequently.

Appendix F (cont) - Frequency of Inspection and Testing

University guidance on the initial frequency of inspection and testing of equipment

Environment	Type of equipment (see notes)	User visual checks (not recorded unless a fault is found)	Class-1	Class-1	Class-2	Class-2
			Formal visual inspection (recorded)	Combined inspection and testing (recorded)	Formal visual inspection (recorded)	Combined inspection and testing (recorded)
Industrial kitchens Restaurants Laundries Café	S	Weekly	None	24 months	None	24 months
	IT	Weekly	None	24 months	None	24 months
	M	Before use	6 months	12 months	6 months	24 months
	P	Before use	6 months	12 months	6 months	12 months
	H	Before use	6 months	12 months	6 months	12 months
	F*	3 months	12 months	24 months	12 months	48 months
Equipment used by the public	S	Weekly	monthly	12 months	12 months	24 months
	IT	Weekly	monthly	12 months	12 months	24 months
	M	Weekly	weekly	6 months	6 months	12 months
	P	Before use	weekly	6 months	6 months	12 months
	H	Before use	weekly	6 months	6 months	12 months
	F*	Weekly	12 months	36 months	12 months	36 months
Universities Teaching areas Estates	S	Weekly	None	12 months	12 months	48 months
	IT	Weekly	None	12 months	12 months	48 months
	M	Weekly	6 months	12 months	12 months	48 months
	P	Weekly	6 months	12 months	12 months	48 months
	H	Before use	6 months	12 months	12 months	48 months
	F*	Weekly	12 months	36 months	12 months	48 months
Hotels Student Accommodation Tutor flats Wardens flats	S	None	24 months	60 months	24 months	None
	IT	None	24 months	60 months	24 months	None
	M	Weekly	12 months	24 months	24 months	None
	P	Weekly	12 months	24 months	24 months	None
	H	Before use	12 months	24 months	12 months	None
	F*	Weekly	24 months	48 months	24 months	None
Offices Shops	S	None	24 months	60 months	24 months	None
	IT	None	24 months	60 months	24 months	None
	M	Weekly	12 months	24 months	24 months	None
	P	Weekly	12 months	24 months	24 months	None
	H	Before use	12 months	24 months	12 months	None
	F*	3 months	24 months	48 months	24 months	None

Notes:

- S Stationary equipment
- IT Information technology and Business Equipment
- M Moveable equipment
- P Portable equipment
- H Handheld equipment
- F Fixed equipment

Appendix G – Frequent asked questions

What do I do if the equipment is broken, or not working?

If the equipment is broken (i.e. damage to the case/flex/plug) then it will fail the visual inspection. If the equipment is not working, it will fail the functional test. If the cause is not obvious, it should be referred for repair, and the equipment owner advised to contact the manufacturers for further information.

What if the equipment has no CE mark?

Older equipment may not have a CE mark, but as long as it passes all the electrical tests/inspections, it should be passed.

Do I fail the equipment if it only fails one or more of the tests?

Yes.

If the cause of the failure is unclear, the equipment owner should be advised to contact the manufacturer for further information.

Should I do a flash test (dielectric strength test)?

No.

Flash tests are performed by the manufacturers. They can damage sensitive electronic equipment, and can lead to the degradation of insulation if performed frequently on equipment.

Do I need to test New Equipment?

Not normally. New equipment should be registered on the inventory as per the purchasing department's guidelines. It does not normally require testing until its normal test date (from the date of purchase) comes up. New equipment would only be tested, if it was suspected that it was defective.