Workplace Safety

February 2020

Electrical Safety: 12 Rules

Occupational Health & Safety Service
HSD101P (rev 4)

UNIVERSITY OF CAMBRIDGE

Electricity has the power to kill

Don't give it the chance!

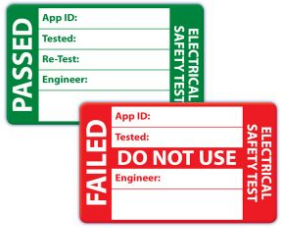
Do a quick visual check for damage or faults of anything electrical before you use it; include the socket, plug, cable grip, lead, connections and equipment.

Inspect and test all electrical equipment regularly, see HSE guidance*.

Portable Appliance Testing (also known as PAT testing) should be carried out at regular intervals to help ensure that all electrical equipment is safe and properly maintained. Therefore each item of equipment should have an 'Electrical Safety Test' label or sticker, which will show a test date.

NEVER USE ELECTRICAL EQUIPMENT WHICH DOES NOT HAVE A CURRENT GREEN 'PAT-TEST PASSED LABEL'

For example only:



If a retest date has been assigned and then passed, contact the person responsible for PAT testing and do NOT use the equipment until tested. Test intervals vary depending upon risk, but are often simplified to annual testing.
Do NOT use any equipment with a 'FAILED' (red) label until it is repaired and retested

Background.

In the UK each year there are about 1,000 accidents at work involving electric shock or burns. Around 30 of these are fatal. Even non-fatal shocks can cause severe and permanent injury. In a serious incident in Cambridge in 2000, a student received an electric shock and at another University a student was electrocuted and died as a result of a badly wired mains plug.

So here are 12 rules ……

1. Always switch off and unplug electrical equipment before examining it and NEVER touch terminals to "see" if they are live.

2. Do not modify or work on any "live" equipment. There are strict laws governing working with 'live' electricity. Equipment should NOT have exposed live parts, terminals or un-insulated wires.

3. Do not obstruct plugs or other means of turning off the power in an emergency. Where possible labelling plugs and a simple sign or label such as 'Please turn off in an emergency' may be useful.

4. Do **NOT** interfere with any University mains electrical **circuits and installations** or attempt to repair or alter them in any way.

5. If you are competent and authorised to make or adapt electrical **equipment**, it must be assessed prior to use by a nominated competent person in your Department. **Never** build or adapt such equipment without their approval.

6. Take immediate action on faulty or damaged equipment:

- switch off and unplug from the supply,
- label equipment to identify that it must not be used,
- report it to the technician / person responsible and
- if it is left in an 'unsafe' condition consider having a competent person remove the fuse, plug or lead to prevent inadvertent use.

7. Do not use extension leads unless absolutely necessary, never overload them and never use where liquids are present or could be present as a result of spill, leak or splashing. NEVER 'daisy chain' extension leads, that is link together in a chain.

NB: leaving an 'extension lead' coiled will significantly reduce the load it can safely carry and could result in it overheating which can cause fires[$].

8. Multi-plug adaptors mechanically strain sockets and if overloaded can overheat and cause fires. They are banned in the University. Un-fused multi-plug adaptors are particularly hazardous and should **never ever** be used. (see; HSD 174P)

9. Always use the correct lead and correct fuse for the equipment. If a fuse 'blows' there will be a reason; so get the equipment checked by a competent technician before using it again.

10. Remember the role of the fuse, which is **relatively slow** to react and prone to inaccuracy, is principally to protect the equipment and **not** the user. An RCD (Residual Current Device) detects some, but not all, faults in electrical systems and **rapidly** switches the supply off.

Using an RCD will help to protect the user as well as the equipment.

11. Almost all equipment, unless it is 'double insulated', should be earthed. If in doubt ask a competent technician and **never** disconnect an earth wire.

12. Work safely. Make sure that you have read the instructions for the equipment. Ensure you know what you are doing before you start and….

"If in doubt – don't do it – ask for advice!"

Help and advice are available from,

- The person responsible for electrical safety in your Department,
- Your Departmental Safety Officer,
- The University Health and Safety Office.

Further information:

[$] HSD174P Guidance for the use of Electrical Adaptors and Extensions

The Government's Health and Safety Executive's website and their publications including:

Maintaining portable and transportable electrical equipment: HSG107, 2013.

Maintaining portable electrical equipment in low-risk environments: INDG 236 2013. This includes revised guidance on testing and maintenance intervals.

Note: The University still fully supports the use of PAT Testing at appropriate intervals to maintain the safety of electrical equipment.

However, the most important safety measure all users should do is the visual inspection before each use!

HSD101P

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