

The Glasgow School of Art

GSA Guide to Safe Use of Electrical Extension Systems

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Policy Control

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GSA Guide to Safe Use of Electrical Extension Systems

Introduction

Glasgow School of Art endeavors to provide an environment where electrical systems and devices are regularly checked to ensure they remain in a fit and serviceable condition. If you find any wear or fault with any electrical apparatus you should not use it (switch it off safely if it is in use) and seek advice from your tutor or programme leader.

Any equipment must be used sensibly and appropriately in accordance with the manufacturer's advice.

Please consider the following when using electrical extension systems:

1. Overloading

The biggest risk associated with multiple appliances and devices sharing sockets is that of fire through overloading the electrical system. This is caused by plugging too many items into the extension or plugging one extension lead into another. Remember, extension systems plug into a wall socket that is rated at a maximum of 13 amps or 3kW.

It is important to choose the correct extension lead for your chosen task. The following types of extensions are most common found:

Single Socket Extension	Multi-Socket Extension	Cable Reel Extension
		

When choosing the correct extension system to use, choose a multi-socket extension rather than a block adaptor, as this will put less strain on the wall socket. Some block adaptors do not have a fuse, which increases the risk of overloading and fire. Using all the available sockets and overloading the system can cause the extension to overheat; this is particularly prevalent in systems with coiled cables. When using a cable reel extension the cable should be unwound fully to ensure the cable does not overheat. Wherever possible, use extension leads which have a switch on each individual socket, and avoid extensions with more than 4 sockets, as this will reduce the tendency or temptation to overload them.

Electrical systems are not designed to run numerous appliances off single sockets, so you should NEVER connect extension leads together in a 'daisy chain'. If one extension doesn't have enough sockets on it, you should disconnect one thing to use another

Below is a link to an online calculator which helps identify the sort of devices which would quickly lead to overloading:

<http://www.electricalsafetyfirst.org.uk/guides-and-advice/electrical-items/overloading-sockets/>

Examples:



Here is an example of “daisy chaining” where one extension system (multi-way bar extension) plugged into another (cable reel) causing it to become overloaded.



Only use extension systems when required and avoid creating further risks i.e. introducing water near electricity. Remember, when using an extension reel the cable should be unwound fully to ensure the cable does not over heat.

2. Portable Appliance Testing (P.A.T)

Equipment connected to our electrical systems must be appropriately tested before plugging it into GSA sockets. New electrical equipment of UK origin does not require to be tested for one year, but equipment purchased overseas (where electrical system specifications may vary) require testing which includes any adaptor plugs. This includes extension leads, lamps, hairdryers etc. The tests require a competent person to undertake them and to make suitable records.

You should also routinely examine the device and cabling to ensure there is no obvious damage prior to using any piece of equipment.

Check regularly for the following:

- a smell of hot plastic or burning near an appliance or socket
- sparks or smoke coming from a plug or appliance
- blackness or scorch marks around a socket or plug, or on an appliance
- damaged or frayed leads
- coloured wire inside leads showing at the plug or anywhere else
- melted plastic on appliance casings or leads
- fuses that blow or circuit

If you identify an electrical device that you suspect has been damaged or does not have a PAT label you must bring this to the attention of your tutor or programme leader. If you require items to be

tested you should speak to your tutor/programme leader who can advise on the arrangements in relation to P.A.T testing.

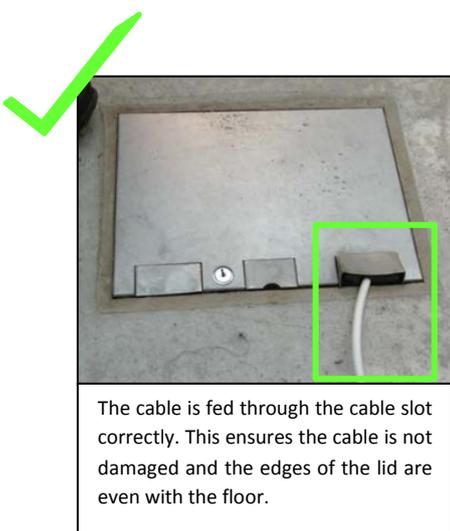
3. The Correct Use of Floor Boxes

When using floor box sockets it is important to ensure that the cable is routed correctly using the cable slots provided. If the cables are placed incorrectly, the cables and floor box can suffer damage creating a potential risk of electric shock and/or fire (especially if the lid is stood or walked on).

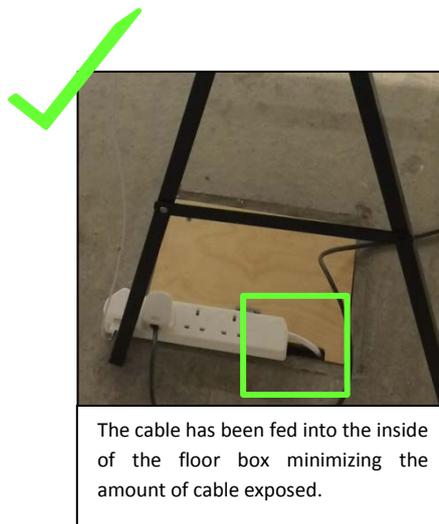
Beware of trapping or damage to the cable as it goes through floor boxes or when it is walked on. This can lead to the internal wires becoming exposed and damaged, with the risk of electrical shock and fire.

Ensure the floor box is closed in the correct position when not in use, this will help minimise tripping hazards.

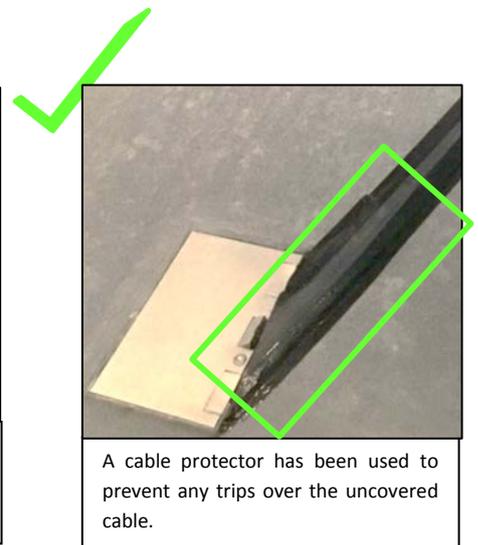
See below for examples:



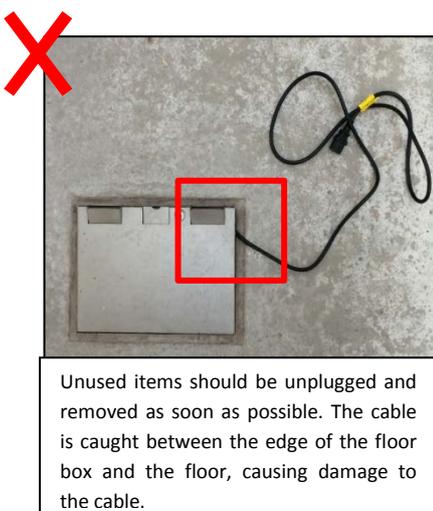
The cable is fed through the cable slot correctly. This ensures the cable is not damaged and the edges of the lid are even with the floor.



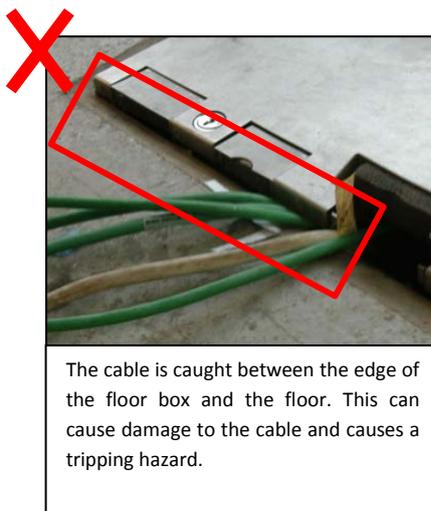
The cable has been fed into the inside of the floor box minimizing the amount of cable exposed.



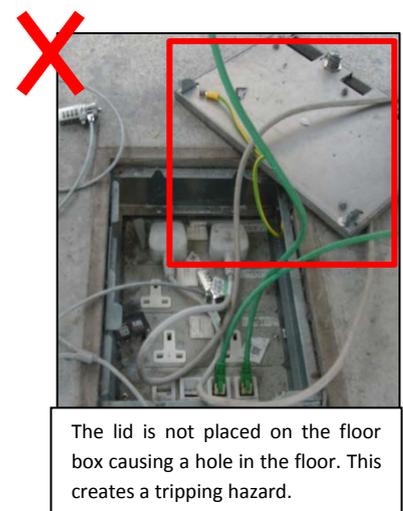
A cable protector has been used to prevent any trips over the uncovered cable.



Unused items should be unplugged and removed as soon as possible. The cable is caught between the edge of the floor box and the floor, causing damage to the cable.



The cable is caught between the edge of the floor box and the floor. This can cause damage to the cable and causes a tripping hazard.



The lid is not placed on the floor box causing a hole in the floor. This creates a tripping hazard.

4. Slips, Trips and Falls

Where you do have to use an extension lead you should position it so that it minimizes any trip hazard as possible – avoid routing it across a walkway or cover it.

Cables should be positioned in such a way that people don't have to walk over them – you could locate your electrical items close to a power socket on the wall so the cable can be secured along the wall instead of across the floor. Where the layout of the work is such that the cable must run along the floor it must be protected by a 'cable protector' and not simply taped down.

You should avoid burying extension leads under piles of material, particularly flammables such as paper, cloth, etc.

5. Using a Residual Current Device (RCD)

An RCD is a device that constantly compares current in and out. When it detects a change i.e. when the cable is cut or the current finds a better path to earth via the user, it will trip out and cut the supply. It is advisable to use a residual current device whenever possible but particularly in wet or damp locations, such as outdoors and for areas such as for regular end-of-term social events, studio working, degree show etc.

Residual Current Device (RCD) can reduce the likelihood of an electrical injury but a shock can still cause very serious or fatal injuries, so an RCD should only be used as a secondary means of reducing the risk of people being injured by electricity. RCD's are not designed to prevent the ignition of an explosive atmosphere and should not be used for this purpose.



The best place for an RCD is built into the main switchboard, as this means that the electrical supply is permanently protected. If this is not possible, an electrical socket outlet incorporating an RCD, or a plug in RCD adaptor, can also provide additional safety.

If an electrical socket outlet incorporating an RCD, or a plug in RCD adaptor is used it should be tested, by the user, prior to use by operating the Test button. Faulty RCDs should not be used and either removed for use or labelled as faulty.

An RCD detects some, but not all, faults in the electrical system and rapidly switches off the supply, reducing the potential for injury caused by a common type of electric shock. To reduce the likelihood of injury to people the RCD should have a tripping current of not more than 30 milliamps (mA). RCDs with a higher tripping current are used to protect against fire.

Remember:

An RCD is a valuable safety device, never bypass it; if the RCD trips, it is a sign there is a fault. Check the system before using it again; if the RCD trips frequently and no fault can be found in the system, consult the manufacturer of the RCD; the RCD has a test button to check that its mechanism is free and functioning. Use this regularly.