Guidance Note, GN001

GUIDANCE ON ELECTRICAL EXTENSIONS

Introduction

There are a number of different types of extensions available, but they are susceptible to misuse or abuse. They can include multi-block adaptors, cable extensions with a single outlet, multi-socket extension leads and cable reels. Fixed electrical sockets are always preferable to the use of extensions.

The following guidance is to inform staff on safe use of extensions.

Common Issues

Overloading – the most common and dangerous problem with extension leads is overloading. This occurs when too many high current appliances are plugged into an extension or by plugging one extension lead into another, so called 'daisy chaining'. It has to be highlighted that the initial extension lead is plugged into a wall socket that is rated at a maximum of 13 amps or 3kW. As a result, extension leads should not be overloaded with high current appliances *e.g.* portable heaters, kettles, microwaves, *etc.* These items should be plugged directly into a 13 amp mains socket. A visual 'calculator' to illustrate how easy it is to overload an extension socket can be found on the Electric Safety First website at: http://www.electricalsafetyfirst.org.uk/guides-and-advice/electrical-items/overloading-sockets/.

Damage To Cables – extension cables are often damaged by people walking on the cable, passing the cable through doors and windows or due to contact with moving furniture. This can result in damage to and exposure of the internal wiring and the subsequent risk of electrical shock.

Moisture Exposure – any extension that goes external to a building must, as a minimum, be fitted with a protection device such as a residual current device (RCD). This must be fitted where it enters the main wall socket. To minimise the risk of electric shock injury, the RCD must have a tripping current of not more than 30 milliamps (mA). The RCD must be tested by the operator every time it is used by using the 'test' button and those that fail to operate must be removed from use. For those locations where an external power supply is required on a frequent basis *e.g.* end of term social events, maintenance, *etc.*, then an exterior mounted socket should be installed. For very infrequent and one-off use, as a minimum a portable RCD located at the wall socket must be used and tested by the operator using the 'test' button.

Guidelines for use

- Extensions must be procured through the University finance and ordering system and extensions must not be brought in from home
- Extensions must be included in the programme for portable appliance testing to ensure that they remain electrically safe
- Ensure that extensions are the appropriate length required

- Extensions used should be inspected prior to use and periodically thereafter, this includes visual inspection for any physical damage to the cable or burning / browning of sockets / plug
- Extensions should be preferably mounted on the wall and the leads secured to the wall, although they should not be secured with cable ties. If this is not possible, the socket and cable should be positioned to prevent accidental damage
- Where cables are positioned where they could be walked on or be a trip hazard, they must be protected by a cable cover
- Cable reel extensions must be unwound fully to prevent the coils from overheating
- Extensions must not be 'daisy-chained' by connecting one extension to another

Notes On Available Extension Types

Type		Comments on risks
Multi-block adaptor		Not normally fused, protrude from wall and easily damaged. **Not permitted within the University**
Single extension		Cable susceptible to damage, **additional extension leads or multi-block adaptor are not to be plugged into extension** as this causes increase in resistance and possible overheating
Multi-socket extension		Multiple high current appliances can be plugged in, causing wall socket to be overloaded. **Only to be used with small current appliances**
Cable reel		Fully unwind prior to use to prevent overheating of the coils. **Should not be used outside due to potential for water ingress or damage**, but if no alternative must use a RCD plugged into wall socket
RCD protected cable reel		**RCD must be located at the plug end and not at the socket end.** RCD at socket end does not protect if the cable of the reel is damaged.