Connecting Electrical Equipment Policy

1.0 Introduction

DCU is committed to providing a safe environment for its staff, students and visitors. Part of this responsibility is the provision and management of electricity.

Electrical connections are all around your workplace. Electrical wiring connects to switches, outlets, appliances, equipment, meters, and circuit breakers. There are a number of ways to make these connections, but what is most important is that the person making the connection is competent and that the connections made are safe and secure.

2.0 Purpose

The purpose of this policy is to outline the control measures that must be adhered to when connecting electrical equipment.

3.0 Scope

This policy applies to all units of the university, both academic and support, including the campus companies and research centres. These are all hereinafter collectively referred to as the 'university''.

The scope of the procedure includes:

- Definitions
- Responsibilities
- The requirement for CE marking
- Who should make electrical connections?

4.0 Definitions

Single Phase supply

The majority of electrical connections in laboratories and offices in DCU (and in our homes) use single phase power supply (diagram 1) operating at 230V. Depending on the nature of equipment connected, the same type plug can be fused from 3A to 13A. Higher current applications (16A to 32A) use a plug and socket similar to diagram 2.

Three Phase supply

In a symmetric three-phase power supply system, three wires each carry an alternating current of the same frequency and voltage amplitude relative to a common reference but with a phase difference of one third of a cycle between each. Three-phase power supply is more suitable for equipment requiring more power such as motors as they run more smoothly as power delivery is approximately constant (diagram 4). An incorrect wiring of a 3-phase connection poses a serious health & safety risk and can also damage the instrument.

5.0 Roles & Responsibilities

While the use of electricity at work is regulated by several pieces of legislation, the specific piece of legislation where electricity is addressed most directly is in Part 3 (Regulation 74 to 93) of the 2007 Safety Health & Welfare at Work (General Application) Regulations.

Core of this legislation is the risk assessment approach, and the legal duty on employers to ensure the safe interaction of his or her employees with all items associated with electricity.

The University must ensure that all electrical installations are so designed, constructed, installed, maintained, protected and used, so as to prevent danger.

Certain roles within the university have particular responsibilities in ensuring compliance with the above legislation. These are outlined below.

Deans/ Heads of Schools/ Unit Heads/ Research Centre Directors/ Principal Investigators (PI)/ Campus Company Directors responsibilities:

- Ensure that relevant staff are familiar with the requirements of the policy
- Implement the requirements of this policy within their unit
- Ensure an adequate hazard identification and risk assessment is completed

6.0 Policy Statement

CE marking

All electrical goods purchased in DCU must have CE marking and should be specified in procurement specifications when tendering for equipment. This is a certification mark that indicates conformity with health, safety, and environmental protection standards for products sold within the European Economic Area (EEA). The CE marking is also found on products sold outside the EEA that are manufactured in, or designed to be sold in, the EEA.

Who should make electrical connections?

Most equipment, including analytical instruments, computers, printers, are delivered with the correct power cable included. In certain cases, equipment may not have the power lead terminated with a plug. Seek the assistance from a technical officer in your school or research centre to advise on the correct process to be followed.

Single phase (16A and greater) or any 3-phase connection (diagram 2 and 3) should only be carried out by a qualified electrician. Log a ticket on the Estates Helpdesk and request the assistance of an electrician. Estates i.e. GFM or an alternative approved electrical contractor will provide a competent electrician and they will complete the task if they think it is safe and only when they are provided with the relevant information on electrical loading, circuit breaker specification, etc. Where equipment is supplied without a power lead, no attempt should be made by staff to fabricate a lead and connecting plug. It is the responsibility of the Unit Head to identify the level of competence required in advance

of the installation of new equipment and raise a ticket as appropriate for the type of work as described, or preferably, request the equipment vendor to supply the required cable and connecting plug appropriate to the standard in the Republic of Ireland.

Diagram 1. Example of a single phase plug 13A 230V (1 x live, 1 x neutral and 1 x earth)

Diagram 2. Example of a single phase plug and socket 16A 230V (1 x live, 1 x neutral and 1 x earth)

Diagram 3. Example of a 3-phase plug and socket 32A 400V (3 x live, 1 x neutral and 1 x earth)

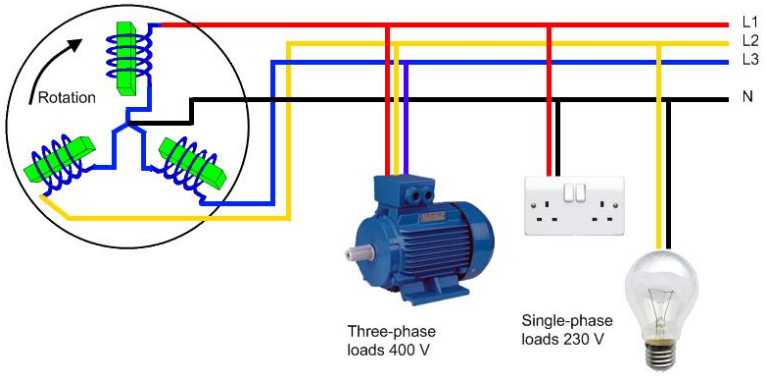

Diagram 4. Schematic of single phase and 3-phase electricity supplies

Moulded Plug

If the appliance has a moulded plug, it cannot be opened or rewired. If the plug is damaged or faulty, it can be cut off and a new plug fitted.

Appliances with 2-core flexes

The two cores should be connected to the appropriate LIVE and NEUTRAL terminal; the EARTH terminal is not used in this case.

Appliance Safety Tips

- Always read the manufacturer's instructions carefully before using a new appliance
- Treat flexes with care and check regularly for signs of wear
- Don't repair a damaged flex or make joints to extend a flex
- Replace all appliances or plugs which are broken or have signs of excessive heating
- Don't drag an appliance by the flex or pull on the flex to remove a plug from the socket
- Don't overload sockets, use fused extension leads if required
- Uncoil an extension lead completely before use
- Don’t use portable appliances in a wet location

7.0 Related Documentation

DCU Framework Safety Statement

8.0 Contacts

DCU Health and Safety Office
Room CG10 Henry Grattan Building
Glasnevin Campus Extn: 8678
safety@dcu.ie

9.0 Policy Review

This policy will be reviewed every three years.

10.0 Version Control

Document Name	Connecting Electrical Equipment Policy		
Unit Owner	Health & Safety		
Version Reference	**Original Version 1.0**	**Reviewed Version 1.1**	
Approved by	Executive	Health & Safety Officer	
Date	November 19th 2019	September 2nd 2024	

End.