

## Electrical Installation or Electrical Alteration Work Procedures

### 1. Preamble

- 1.1 These procedures apply to all trade or technical contractors engaged by the University of Western Sydney to build, repair, maintain, modify or remove any University service, facility or equipment. The procedures have been developed as part of the University's ongoing approach to occupational risk management and to ensure that the potential adverse impact that on the normal and safe routine Operations of the University is eliminated and/or minimised.
- 1.2 Advice regarding the application of this document can be obtained from the Director of Capital Works and Facilities and/or the UWS OHS&R Unit

### 2. Definition

- 2.1 For the purposes of these procedures, the following categories of trade person only shall apply:
  - (i) Category 1: Electricians appointed to Capital Works & Facilities.
  - (ii) Category 2: Electrical contractors approved by Capital Works & Facilities.

### 3. Aims

- 3.1 Only qualified electricians in Category 1 or 2 are permitted to carry out installation of or alterations to the electrical systems on UWS properties or hirings.
- 3.2 Only persons in the above categories are permitted to undertake the repair or manufacture of electrical installations which are to be connected to UWS power supplies.
- 3.3 No person is permitted to purchase or use electrical appliances on UWS properties or hirings that do not conform to relevant Australian Standards.
- 3.4 All electrical appliances purchased for use on UWS properties or hirings shall undergo routine examination and testing prior to connection to UWS

- power supply and at intervals as deemed necessary by qualified electrical trade persons in either Category 1 or 2.
- 3.5 All privately owned electrical appliances and extension leads intended for use on UWS properties or hirings shall undergo routine examination and testing prior to connection to UWS's power supply and at intervals as deemed necessary by qualified electrical trades persons in either Category 1 or 2.
  - 3.6 The use of double adaptors, unswitched power boards or other "piggy back" devices are not permitted on any of UWS properties or hirings.
  - 3.7 A notification of electrical work certificate issued pursuant to the requirements of the electrical supply authority shall be obtained at the completion of all electrical installation or alteration work carried out by Category 2 trade persons.
  - 3.8 At the completion of all electrical maintenance involving emergency lighting or alarm systems carried out by Category 2 trades persons, a certificate of compliance issued pursuant to Ordinance 70, Clause 59.5 Local Government Act 1912 shall be obtained.
  - 3.9 No person other than those in Category 1 or 2 are permitted to access electrical switch rooms or distribution boards.
  - 3.10 No person other than those in Category 1 or 2 shall be permitted to hold or be issued with keys to gain access to electrical switch rooms or distribution boards.
  - 3.11 Prior to commencing excavation work for the purposes of installing under ground electrical cables, the approval of the Capital Works & Facilities shall be obtained.
  - 3.12 During the construction phase of new facilities, the development site and all electrical installations within the boundaries of that site shall for the purposes of these procedures, be deemed not to be under the control of UWS. Control of all electrical installations within the boundaries of such sites will remain the sole responsibility of the head contractor until such time as the acceptance of the facility by the relevant UWS officers is completed and all relevant compliance certificates are duly issued.

- 3.13 The provision of electrical supplies from existing UWS facilities to any development site shall be subject to the approval of the Head, Maintenance and Campus Services, and shall be carried out under the supervision of Category 1 trade persons.
- 3.14 Where the routine maintenance, installation or alteration to the electrical distribution systems requires the isolation of power to essential safety appliances i.e.; fume extraction systems, fire detection or suppression monitors, evacuation alarms, water booster pump or water filtration installations, the officer/s in charge of the affected facilities shall be formally notified prior to isolation.
- 3.15 All electrical compliance certificates issued by category 2 trade persons for work carried out on UWS properties or hirings shall be forwarded, to the Electrical Supervisor, Division of Resources and Development.
- 3.16 All certificates issued in accordance with Paragraphs 6, 7 and 14 of this document shall be held for inspection for a period of not less than five (5) years from the date of issue.
- 3.17 The manufacture of electrical extension leads for use on UWS properties or hirings shall only be undertaken by trade persons in Categories 1 or 2.
- 3.18 All plugs and sockets fitted to electrical extension leads and portable power tools shall be either a non-wirable (moulded) type or a transparent type.
- 3.19 The maximum permissible length of electrical extension leads shall be in accordance with 'Table 1' (below) and manufactured in accordance with AS3199 'Approval and Test Specification, Cord Extension Sets'.

### 3.20 **Maximum Length of Flexible Cord**

**Table 1**

Cord extension Set rating,

A Conductor Area Sq. mm, Maximum length of Flexible cord metres:

10	1.0
1.5	25
32	
15	1.5
2.5	25
40	
20	2.5
40	32
40	

3.21. The maximum permissible length of any electrical appliance power lead shall not exceed five (5) metres. Where the appliance is to be connected via an approved power board the length of the cord attached to the power board shall be regarded as forming part of the five (5) metre appliance lead calculation.

3.21 All electrical extension leads and power boards are to be re-certified annually by trades persons in category 1 or 2.

3.22 Where power supplied to portable power tools requires the use of an extension lead the extension lead is to be connected to a circuit protect by either a permanently hard wired or portable Core Balance Earth Leakage Device also known as a Residual Current Device complying with AS3190 'Current Operated Earth Leakage Devices Approval and Test Specification'.

## **4. References**

- 4.1 New South Wales Occupational Health and Safety Act, 2000
- 4.2 New South Wales Occupational Health and Safety Regulations 2001
- 4.3 New South Wales Local Government Act, 1912

- 4.4 Code of Practice NSW WorkCover NSW Electrical Practices for Construction Work.
- 4.5 AS 1021 Purging Electrical Equipment
- 4.6 AS 1136.1 Low Voltage Switch Gear and Control Gear
- 4.7 AS 1470 Health and Safety at Work Principles & Practices
- 4.8 AS 1482 Electrical Equipment for Explosive Atmospheres
- 4.9 AS 1485 Safety & Health in Workrooms of Education Establishments
- 4.10 AS 1852 Electrical Equipment for Explosive Atmospheres
- 4.11 AS 2220 Emergency Warning & Intercommunications Systems for Buildings
- 4.12 AS 2243.1 Safety in Laboratories General
- 4.13 AS 2243.7 Safety in Laboratories Electrical Aspects
- 4.14 AS 2293 Emergency Evacuation Lighting in Buildings
- 4.15 AS 2293.1 Emergency Evacuation Lighting in Buildings
- 4.16 AS 2293.2 Emergency Evacuation Lighting in Buildings
- 4.17 AS 2381.1 Electrical Equipment for Explosive Atmospheres
- 4.18 AS 2381.7 Electrical Equipment for Explosive Atmospheres
- 4.19 AS 2381.10 Electrical Equipment for Explosive Atmospheres
- 4.20 AS 2430.1 Classification of Hazardous Areas
- 4.21 AS 2430.2 Classification of Hazardous Areas
- 4.22 AS 2430.3 Classification of Hazardous Areas
- 4.23 AS 2676.1 Installation, Maintenance, Testing and Testing of Secondary Batteries in or on Buildings
- 4.24 AS 3000 Wiring Rules
- 4.25 AS 3001 Electrical Installations – Movable Premises
- 4.26 AS 3002 Electrical Installations – Shows and Carnivals
- 4.27 AS 3005 Electrical Installations of Tents and Similar Temporary Structures for Domestic Purposes
- 4.28 AS 3006 Adequate Electrical Installations in Domestic Premises
- 4.29 AS 3010.1 Electrical Installations – Supply by Generating Set
- 4.30 AS 3011.1 Electrical Installations – Secondary Batteries Installed in Buildings
- 4.31 AS 3012 Electrical Installations – Construction & Demolition Sites
- 4.32 AS 3013 Electrical Installations – Wiring Systems Specific Applications
- 4.33 AS 3105 Approval & Test Specification for Electrical Portable Outlet Devices
- 4.34 AS 3190 Current Operated Earth Leakage Devices Approval & Test Specification

- 4.35 AS 3199 Approval & Test Specification, Cord Extension Sets
- 4.36 AS 3589 Effects of Current Passing Through the Human Body
- 4.37 AS 3865 Calculation of Effects of Short Circuit Currents
- 4.38 SAAHB 13/NEEITIC 181.1 – Electrical Equipment for Hazardous Areas