UEE11 Electrotechnology
Training Package

Electrical Drawings and Wiring Systems

Learner Workbook
Version 1

Training and Education Support
Industry Skills Unit
Meadowbank

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Section 1 – Standards, Regulations & Testing for Supply

Section Purpose
In this section you will learn about legislative requirements for electrical safety and associated standards.

Section Topics
- Technical drawing standards, conventions and specifications
- Abbreviations and symbols
- Types of drawing representations
- Orthogonal projection
- Third angle – detail and assembly drawings
- Pictorial views.

Learning Objectives
At the end of this section you should be able to:
- State the scope of work covered by licensing in the Electrotechnology industry
- State the legislative requirements for ensuring electrical or electronic equipment is safe
- Describe the purpose of technical standards and their development
- Describe the role of standards Australia/New Zealand, International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC)
- Explain the arrangement and use of technical standards in relation to electrical and electronic work
- Describe a typical electrical installation including consumer’s mains, main switchboards, sub-mains, distribution boards and final sub-circuits
- Use basic testing equipment to test electrical supplies.

References
You will find the technical information to undertake this section in the following references:
- AS/NZS 3000:2007
Learner Exercises

Learner Exercise 1.1: Scope of Work Covered by Licensing

1. Does a national system of licensing for the electrical industry exist in Australia?

2. What classes of electrical licence are available in NSW and what is the scope of work for each class of licence?

3. What system of licensing is in place for people who undertake telecommunications cabling?

4. What system of licensing is in place for people who check portable electrical appliances?
Learner Exercise 1.2: Legislative Requirements for Equipment

1. What is the purpose of the Electrical Safety Act?

2. What do Electrical safety regulations identify?

3. What information would a Ministerial notice describe?

4. What information do codes of practice provide?
Learner Exercise 1.3: Technical Standards

1. What is a technical standard?

2. Name the international standardising bodies on which Standards Australia represents Australia’s interests.

3. Which guide provides an understanding of the arrangement of standards?

4. What is the purpose of the Building Code of Australia?

5. Why would a systems electrician need a good working knowledge of the Building Code of Australia?
Learner Exercise 1.4: Typical Electrical Installation

1. Draw a simple block diagram of an electrical installation. Be sure to include:
   - Consumer's mains
   - Main switchboard
   - Sub-main
   - Distribution board
   - Final sub-circuit.
Electrical Drawings and Wiring Systems

Use the wiring rules (AS/NZS 3000) to answer the following questions.

2. What are consumer's mains?

3. What is a main switchboard?

4. What are sub-mains?

5. What is a distribution board?

6. What is a final sub-circuit?
Learner Exercise 1.5: Basic Electrical Testing

1. What are common questions to ask concerning site hazards?

2. What are common questions to ask concerning climate or working environment hazards?

3. List the common questions to ask concerning height hazards.

4. List the common questions to ask concerning mechanical hazards.

5. What are common questions to ask concerning manual handling hazards?