Australian Government

Department of Education, Employment and Workplace Relations

CPCCSI3013A Install LED systems

Release: 1

INDUSTRY
SKILLS
COUNCILS
Creating Australia's Future

CPCCSI3013A Install LED systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit of competency specifies the outcomes required to install light emitting diode (LED) signs.
	No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	This unit of competency supports the achievement of skills and knowledge for installing LED signs, and includes working with others and as a member of a team.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units

CPCCOHS2001A	Apply OHS requirements, policies and procedures in the construction industry

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Employability Skills Information

Employability skills   This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare work.	1.1. *Quality assurance requirements* of signage operations are recognised and adhered to.
	1.2. *Safety* (*OHS*) requirements in *accordance* with application tasks and workplace operations are recognised and adhered to.
	1.3. *Job requirements* are identified from drawings, specifications, instructions and client briefs.
	1.4. Product range is assessed and *selected* in accordance with job requirements and *relevant Australian standards*.
	1.5. *Tools and equipment* and materials are selected to carry out tasks consistent with job requirements.
	1.6. *Routine maintenance* requirements of equipment are identified and implemented in accordance with workplace and quality assurance procedures.
	1.7. Temporary or permanent application of materials is determined from job requirements.
2. Work with materials and equipment.	2.1. LED *materials* are selected according to job specifications.
	2.2. Correct type of routing tools and equipment to be used is selected *according* to job specifications.
	2.3. Cutter types and their *applications* are identified for the specified job.
	2.4. Appropriate routing systems are used to rout LED installation.
3. Install LED system.	3.1. LED system is installed according to manufacturer specifications.
	3.2. LED bulbs and wiring is placed into correct position.
	3.3. Wires are marked *ready* for connection to power source in consideration of *characteristics of electric* supply.
4. Clean up.	4.1. Work area is cleaned and *waste* materials removed in accordance with *statutory and regulatory authority requirements*.
	4.2. Tools and equipment, *including* personal protective equipment, are cleaned, maintained and stored.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills for this unit are:

- ability to prepare surfaces using correct applicators and materials
- ability to recognise procedures, respond to change and contribute to workplace responsibilities, such as current work site environmental and sustainability frameworks or management systems
- communication skills to:
  - determine requirements
  - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
  - follow instructions
  - read and interpret:
    - charts and hand drawings
    - electrical systems
    - job drawings
    - manufacturer specifications and instructions
    - organisational work specifications
    - requirements and instructions issued by authorised organisational or external personnel
  - report faults
  - use and interpret non-verbal communication
  - use language and concepts appropriate to cultural differences
- innovation skills to select appropriate tools and equipment, respond to workplace challenges and put ideas into action
- numeracy skills to apply calculations
- organisational skills, including the ability to plan and set out work
- problem solving skills to recognise, and take action to rectify, minor faults and problems
- teamwork skills to be able to coordinate with others, action tasks and relate to people from a range of social, cultural, ethnic backgrounds and with varying physical and mental abilities.

Required knowledge

Required knowledge for this unit is:

- material safety data sheets (MSDS)
- job safety analysis (JSA) and safe work method statements

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REQUIRED SKILLS AND KNOWLEDGE

- maintenance of routers and cutters
- relevant Australian and New Zealand standards, and:
    - manufacturer specifications
    - OHS requirements
    - other applicable codes or standard operating procedures relevant to the sector
- terminology and definitions used in LED
- theory of LED and routing:
    - routing materials and their uses
    - cutter types
    - LED systems
    - routing depths
    - routing software
    - types of routing systems
    - wiring.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	This unit of competency can be assessed in a real or simulated environment, provided that simulated or project-based assessment techniques fully replicate construction workplace conditions, materials, activities responsibilities and procedures.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of understanding and applying: • characteristics and uses of routing materials and equipment in a range of signage jobs • LED bulbs and wiring used in signage • router set up and safe use • correct and safe maintenance of routers and cutters • correct techniques for connecting and sealing LED wiring.
Context of and specific resources for assessment	This competency is to be assessed using standard and authorised work practices, safety requirements and environmental constraints. Assessment of essential underpinning knowledge will usually be conducted in an off-site context. Assessment is to comply with relevant regulatory or Australian standards' requirements. Resource implications for assessment include: • an induction procedure and requirement • realistic tasks or simulated tasks covering the mandatory task requirements • relevant specifications and work instructions • tools and equipment appropriate to using laser/rotary router for LED system • support materials appropriate to activity • workplace instructions relating to using laser/rotary router for LED systems • material safety data sheets

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EVIDENCE GUIDE

	• research resources, including industry-related systems information • relevant software. Reasonable adjustments for people with disabilities must be made to assessment processes where required. This could include access to modified equipment and other physical resources, and the provision of appropriate assessment support.
Method of assessment	Assessment methods must: • satisfy the endorsed Assessment Guidelines of the Construction, Plumbing and Services Training Package • include direct observation of tasks in real or simulated work conditions, with questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application • reinforce the integration of employability skills with workplace tasks and job roles • confirm that competency is verified and able to be transferred to other circumstances and environments. Validity and sufficiency of evidence requires that: • competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace • where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice, with a decision on competency only taken at the point when the assessor has complete confidence in the person's demonstrated ability and applied knowledge • all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence. Assessment processes and techniques should as far

EVIDENCE GUIDE

	as is practical take into account the language, literacy and numeracy capacity of the candidate in relation to the competency being assessed.
	Supplementary evidence of competency may be obtained from relevant authenticated documentation from third parties, such as existing supervisors, team leaders or specialist training staff.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Quality assurance requirements include:	• attention to work specifications • Australian and international standards relevant to the sign industry • control of handling procedures • internal company quality assurance policy and risk management strategies • procedures for installing and finishing • quality of materials • use and maintenance of equipment • workplace operations and procedures.
Safety (*OHS*) is to be in accordance with state and territory legislation and regulations and project safety plan and may include:	• emergency procedures, including extinguishing fires, organisational first aid requirements and evacuation • hazard control • hazardous materials and substances • organisational first aid • PPE prescribed under legislation, regulations and workplace policies and practices • safe operating procedures, including the conduct of operational risk assessment and treatments associated with:

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RANGE STATEMENT

	- concealed services (water, power and gas) - conduct of operational risk assessment and treatments associated with lighting - restricted access barriers - traffic control - work site visitors and the public - working at heights - working in confined spaces - working in proximity to others - use of firefighting equipment - use of machines - use of tools and equipment - workplace environmental requirements and safety.
Job requirements include:	- and determination of work requirements and safety plans and policies - assessment of conditions and hazards - equipment defect identification - work site inspection.
Relevant Australian standards include:	- regulatory requirements - standard drawings and details - urban design manuals.
Tools and equipment include:	- electrical wire connectors - electrical wire cutters - laser routers - range of router cutting tools - rotary routers.
Routine maintenance includes:	- checking for damage or non-standard performance - cleaning.
Materials include:	- acrylic - laminated acrylic - medium density fibreboard (MDF).
Characteristics of electricity include:	- circuits: - series - parallel - series-parallel - current - voltage

RANGE STATEMENT

	• watts.
Statutory and regulatory authority requirements include:	• federal, state and local authorities administering applicable Acts, regulations and codes of practice and also can pertain to:
	• removal of waste products
	• storage of chemicals.

Unit Sector(s)

Unit sector   Construction

Co-requisite units

Co-requisite units   Nil

Functional area

Functional area