

## PERFORM ELECTRICAL INSTALLATION

UNIT CODE: ENG/OS/EIT/CR/02/6/A

### UNIT DESCRIPTION

This unit covers the competencies required to perform an electrical installation work.

Installation work includes application of EHS standards, interpretation of drawings and development of working drawing, preparation of tools and equipment, installation of electrical systems, facilitating work team and other service providers throughout the installation.

### ELEMENTS AND PERFORMANCE CRITERIA

<b>ELEMENT</b> These describe the key outcomes which make up workplace function.	<b>PERFORMANCE CRITERIA</b> These are assessable statements which specify the required level of performance for each of the elements <i>(Bold and italicised terms are elaborated in the Range)</i>
1. Apply EHS standards	1.1 Appropriate safety regulations are applied 1.2 Occupational health and safety standards are applied 1.3 Good housekeeping practices are applied 1.4 Accidents, incidents and near misses are reported to management immediately 1.5 First aid is applied and specialised treatment is sought where necessary
2. Prepare working drawings	2.1 Installation drawing is interpreted 2.2 Symbols and nomenclatures are applied in accordance with British Standards [BS 3939] 2.3 Appropriate drawing tools are applied 2.4 Components and their ratings are identified 2.5 Cable sizes and lengths are clearly shown 2.6 Power supply and distribution circuits are shown using single line diagrams 2.7 Phase balancing of the loads is done as per the usage 2.8 Cable routes are clearly indicated 2.9 Working drawing is prepared and any deviations shared with relevant bodies
3. Assemble tools, equipment & materials	3.1 Tools, equipment and materials are checked for the proper specifications and functionality 3.2 Tools, equipment and materials are assembled and stored as per the established procedure
4. Observe technical	4.1 The appropriate technical standards for the work is acquired and procedures are checked against

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standards	the standards
5. Coordinate working team	5.1 Tasks and responsibilities are assigned to each team member according to established procedure 5.2 Communication procedures are applied 5.3 Team members are trained as per established procedure
6. Install electrical system	6.1 Appropriate installation procedures and technical standards are applied 6.2 The working drawing is implemented Safety procedures are adhered to for each activity 6.3 Cables, conductors, conduits, enclosures and support Systems are installed to specifications using appropriate techniques, tools and equipment as per the working drawing 6.4 Labelling of the installation for identification is done
7. Facilitate other service providers	7.1 Other service providers on the site are identified 7.2 Communication protocols and procedures are applied 7.3 Service providers are communicated before, during, and after the installation, as necessary 7.4 The requirements of other service providers are obtained and agreed upon 7.5 Provision for other services are made according to the design
8. Maintain house keeping	8.1 Safety check list is prepared for electrical equipment and machines 8.2 Regular follow up is done according to the prepared checklist 8.3 Workplace procedures are followed to deal with any accidents and damage of equipment occurring during the cleaning process 8.4 Activities are recorded and reported as per established procedures

**RANGE**

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

Variable	Range
Installation materials include but not limited to:	<ul style="list-style-type: none"> <li>• Accessories</li> <li>• Cables</li> <li>• Meter boxes</li> <li>• CCUs</li> </ul>
International standards includes but not limited to:	<ul style="list-style-type: none"> <li>• ISO 14001</li> <li>• 90001</li> <li>•</li> </ul>

## REQUIRED KNOWLEDGE AND UNDERSTANDING

The individual needs to demonstrate knowledge and understanding of:

<ul style="list-style-type: none"> <li>• Electrical wiring</li> <li>• Measurement conversions</li> <li>• Load calculations</li> <li>• Power ratings</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical design software</li> <li>• Design tools</li> <li>• Electrical standards</li> </ul>
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## FOUNDATION SKILLS

The individual needs to demonstrate the following additional skills:	
<ul style="list-style-type: none"> <li>• Electrical codes</li> <li>• Engineering principles</li> <li>• Depth of knowledge of electrical wiring methods</li> <li>• Teamwork</li> <li>• Draw plans</li> <li>• Environmental regulations</li> </ul>	<ul style="list-style-type: none"> <li>• Decision making;</li> <li>• Report writing;</li> <li>• Knowledge of “normal” electricity usage</li> <li>• Read and understand plans and symbols</li> <li>• CAD and basic mechanical drafting/illustration</li> </ul>

## EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and understanding and range.

1. Critical Aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Applied and adhered to safety procedures</li> <li>1.2 Interpreted layouts/ circuit diagrams correctly</li> <li>1.3 Applied appropriate technical standards Used proper tools and equipment for a given task</li> <li>1.4 Demonstrated safe selection, placing and wiring of cables/ wires, fixtures and fittings</li> <li>1.5 Installed functional electrical systems</li> </ul>
2. Resource	Resources the same as that of workplace are advised to be applied

Implications	Included: Electrical installation tool kit, calculator, stationery Electrical installation materials Testing equipment Storage facility
3. Methods of Assessment	Competency may be assessed through: 3.1 Observation 3.2 Oral questioning 3.3 Written test 3.4 Portfolio of Evidence 3.5 Interview 3.6 Third party report
4. Context of Assessment	Competency may be assessed individually in the actual workplace or through simulated work environment
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

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