

Domain

Title:

Level: 3

Unit ID: 1219

ELECTRICAL INSTALLATION
Apply safety rules and regulations in an
electrical work environment

Credits: 3

Purpose

This unit standard specifies the competencies required to apply safety rules and regulations in an electrical work environment. This includes planning and preparing for work, following safe work procedures, assessing risks, applying knowledge for isolating and locking out procedures demonstrating safe work procedures and completing work. This unit standard is intended for those who work as electricians.

Special Notes

1. This unit standard is to be assessed in the context of electrical operations and should be assessed in conjunction with other relevant technical unit standards selected from this domain.
2. Assessment evidence may be collected at a real workplace or an appropriate simulated realistic environment in which electrical operations are carried out.
3. Glossary of terms:
 - '*isolation and lockout procedures*' refer to isolating an electrical circuit from the source of supply
 - '*specifications*' refers to any, or all of the following: manufacturers' specifications and recommendations, workplace specific requirements, national and international standards and legislations
 - '*ISO*' refers to International Organization for Standards
 - '*SANS*' refers to South African National Standards.
4. Performance of all elements in this unit standard must comply with industry standards and workplace requirements.
5. Regulations and legislation relevant to this unit standard include the following:
 - Labour Act No. 11 of 2007
 - Petroleum Products and Energy Amendment Act No. 2 of 2005
 - National Energy Fund Act of 2000
 - Gas Act (Draft 2b)
 - Occupational Health and Safety Regulations No. 18, 1997 and all subsequent amendments
 - ISO 14001 (Environmental Management Standard)
 - Electricity Act No.4 of 2007
 - SANS 10142-1 and SANS 10142-2 electrical wiring codes and all subsequent amendments to any of the above.

Quality Assurance Requirements

This unit standard and others within this subfield may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and

moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority on www.namqa.org and the Namibia Training Authority on www.nta.com.na.

Elements and Performance Criteria

Element 1: Plan and prepare for work

Range

Planning and preparation may include but is not limited to workplace inspection, equipment defect identification, assessment of conditions, hazards identification, the environmental impact and determination of work requirements.

Performance Criteria

- 1.1 Work instructions, including permit to work, job card, plans, specifications and operational details are obtained, confirmed and applied.
- 1.2 Safety requirements are followed in line with safety plans and policies.
- 1.3 Tools and equipment selected to carry out tasks is consistent with the requirements of the job, checked for serviceability and any faults rectified or reported prior to commencement.
- 1.4 Material requirements are identified and obtained in line with job card and/or specifications.
- 1.5 Materials are safely handled and located ready for use in line with workplace procedures.
- 1.6 Technical requirements for tools and equipment are sourced and implemented in line with workplace procedures.
- 1.7 Environmental protection requirements are identified and applied in line with environmental plans and legislative requirements.

Element 2: Follow safe work procedures

Range

Personal protective equipment may include but is not limited to overalls, steel capped boots, jacket, gloves, safety glasses or goggles, dust mask or respirator, ear muffs/plugs, safety helmets, rubber mats and safety belts.

Signs may include but are not limited to hazard identification, facility or location signs, site safety, traffic and warning signs and symbols.

Performance Criteria

- 2.1 Tasks are performed in a safe manner and in line with legislative and workplace requirements.

- 2.2 Duties, tools, equipment and materials are organised in line with workplace procedures.
- 2.3 Work area is arranged to minimize accidents and injury.
- 2.4 Approved personal protective equipment and clothing is worn, used and stored according to workplace procedures.
- 2.5 Tool and equipment guards are used in line with manufacturers' and workplace specifications and regulations.
- 2.6 Neither metallic items, nor synthetics are worn on the person while working near live equipment or conductors.
- 2.7 Hair and clothing are not worn loosely near working machinery.
- 2.8 Safety signs and symbols are identified and followed.
- 2.9 Correct posture is maintained when lifting and shifting loads.

Element 3: Assess risks

Range

Hazards may include but are not limited to electrical hazards, chemical spills, gases, liquids under pressure, moving machinery and equipment, hazardous materials, work in confined spaces, work on heights, manual handling, high temperatures, noise, dust, vapours, fires, elements of nature, sharp equipment, traffic and moving equipment.

Designated persons may be manager, supervisor, safety personnel or any other person given the overall responsibility of safety in a workplace.

Performance Criteria

- 3.1 Hazards in the work area are identified, assessed and reported to designated persons.
- 3.2 Safety issues and risks in the work area are identified, assessed and reported to designated persons.
- 3.3 Safe workplace procedures and safe work instructions are followed for controlling risks.
- 3.4 Safety, hazard, accident or incident reports are contributed to, in accordance with workplace and legislative requirements.

Element 4: Apply knowledge of isolation and lockout procedures

Range

Isolation and lockout procedures to be applied considering legislative and workplace requirements and are carried out in line with workplace requirements.

Performance Criteria

- 4.1 Circuit breakers are switched off in line with workplace procedures.
- 4.2 Where applicable, fuses are pulled out according to workplace procedures.
- 4.3 Lock with identification tag at power source is put on according to workplace procedures.
- 4.4 Verification of no-start equipment is demonstrated.
- 4.5 Procedures for zero-voltage test are explained in line with workplace procedures.
- 4.6 Earthing of equipment is applied according to workplace procedures.

Element 5: Demonstrate safe work on heights

Range

Equipment needed for work at height may include but is not limited to step ladder, single ladder, extension ladder, trestle ladder, scaffolding and safety harness.

Equipment maintenance may include but is not limited to defect identification and rectification of cracks, splinters, loose hinges, damage, missing parts, deterioration, operation of working parts missing and loose bolts and rivets and bending.

Performance Criteria

- 5.1 Equipment defects are identified according to safe working practices.
- 5.2 Equipment appropriate for carrying out the task is selected, erected and used to meet job requirements in line with safe workplace procedures.
- 5.3 Equipment is handled, maintained and stored in safe condition in line with workplace procedures.

Element 6: Complete work

Range

Work completion details may include but is not limited to accident report forms and permit to work form.

Performance Criteria

- 6.1 Work is completed and appropriate personnel notified in line with workplace procedures.
- 6.2 Work area is cleared of waste, cleaned, restored and secured in line with workplace procedures and waste management principles.
- 6.3 Reusable material is collected and stored in line with workplace procedures.

6.4 Tools and equipment are cleaned, checked and maintained in line with workplace procedures.

6.5 Work completion details are finalised in line with workplace procedures.

Registration Data

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