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| | Unit ID: 2498 |
| Domain | ELECTRICAL ENGINEERING - CORE |
| Title: | Perform basic soldering and de-soldering procedures for electrical work |
| Level: 2 | Credits: 3 |

Purpose

This unit standard is intended for those who perform basic soldering and de-soldering procedures for electrical work. People credited with this unit standard are able to plan and prepare for work; carry out soldering and de-soldering processes; and clean-up work area.

This unit standard is intended for those who work in electrical workplace environment.

Special Notes

1. Entry information:

Prerequisite

- *Unit 1157 - Demonstrate basic knowledge of workplace health and safety*

2. To demonstrate competence, at a minimum, evidence is required of soldering joints, terminations, including splice clips and connectors; wiring lugs and basic electronic components in a simple Printed Circuit Board (PCB).
3. Assessment evidence may be collected from a real workplace or a simulated workplace environment in which electrical operations are carried out.
4. Soldering may include but not limited to tinning, soldering joints and soldering components.
5. Soldering and de-soldering equipment include associated tools and protective devices.
6. Soldering in this unit standard is limited to '*soft soldering*' which is performed not exceeding 450°C heat requirements.
7. Glossary of terms
 - '*Soldering*' refers to joining metallic materials using an added metal (solder).
 - '*Splice clips*' refers to special connectors used with solder to ensure a rigid connection.
 - '*Specifications*' refers to any of the following: manufacturers' specifications and recommendations, workplace specific requirements.

8. Performance of all elements in this unit standard must comply with manufacturers' specifications, workplace specific requirements and safety procedures.
9. Regulations and legislation relevant to this unit standard include the following:
 - Labour Act, No. 11, 2007.
 - Regulations relating to the health & safety of employees at work under Schedule 1 (2) of the Labour Act No.11 of 2007 and all subsequent amendments.

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 and the Namibia Training Authority. All approved unit standards, qualifications and national assessment arrangements are available on the Namibia Training Authority website www.nta.com.na.

Elements and Performance Criteria

Element 1: Plan and prepare for work

Range

Soldering and de-soldering equipment may include but not limited to soldering iron or soldering gun, solder sucker, wiring lugs, ferrules, connectors, splice clips, soldering flux and insulation materials.

Tools may include but are not limited to side cutters, long nose pliers, wire strippers, blower and small files.

Performance criteria

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and interpreted.
- 1.2 Signage and barricade requirements are identified and implemented, where necessary.
- 1.3 Personal Protective Equipment are selected in line with job and safety requirements.
- 1.4 Tools and equipment selected to carry out tasks are consistent with job requirements, checked for serviceability, and any faults are rectified or reported prior to commencement.

- 1.5 Material quantity requirements are calculated in line with plans, specifications and quality requirements.
- 1.6 Environmental protection requirements are identified and applied in line with environmental plans and regulatory obligations.

Element 2: Carry out soldering and de-soldering processes

Range

Soldering and de-soldering is limited to simple wiring lugs, connectors and connections of basic components into a simple circuit.

Performance Criteria

- 2.1 Safety and workshop procedures to be followed when soldering, are explained and followed in accordance with health and safety legislation.
- 2.2 Soldering and de-soldering procedures of soldering joints are followed during the soldering process.
- 2.3 Solder and flux are chosen to match the job in terms of size and type of solder.
- 2.4 Tools and equipment are used safely to meet the requirement of the job.
- 2.5 Excessive heat, electrostatic discharge (ESD), and mechanical stress are prevented in line with manufacture specifications and job requirement.
- 2.6 Materials are soldered at controlled heat without damage to the surrounding components and insulation in line with soldering procedures.
- 2.7 Solder joint is inspected and assessed.
- 2.8 Soldering and de-soldering tips are kept tinned, shaped, and clean in accordance with industry practice.

Element 3: Clean-up work area

Performance Criteria

- 3.1 Work area is cleared, cleaned, restored and secured in line with workplace procedures.
- 3.2 Tools and equipment are cleaned, checked and stored in line with manufacturer specifications and workplace procedures.
- 3.3 Materials and wastes are disposed of, reused, or recycled in accordance with legislation, regulations, codes of practice and job specifications.

Registration Data

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| Date first registered: | 23 November 2023 |
| Date this version registered: | 23 November 2023 |
| Anticipated review: | 23 November 2028 |
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| Body responsible for review: | Namibia Training Authority |