

<b>Domain</b>	<b>PLUMBING</b>	<b>Unit ID: 441</b>
<b>Title:</b>	<b>Perform soft soldering as part of plumbing operations</b>	
<b>Level: 1</b>		<b>Credits: 4</b>

**Purpose**

This unit standard specifies the competencies required to perform soft soldering as part of plumbing operations. It includes the selection and preparation of soldering tools, equipment and materials, the safe performance of soft soldering operations, conducting post-soldering inspection of the soldered joints and cleaning up the work area.

This unit standard is intended for those who work as plumbers.

**Special Notes**

1. Entry information:
  - Prerequisite
    - 434 - *Apply safety rules and regulations in plumbing operations* or demonstrated equivalent knowledge and skills.
2. To demonstrate competence, at a minimum, evidence is required of joining two galvanised sheet metal work pieces and joining two copper pipes using capillary fittings.
3. Assessment evidence may be collected from a real workplace or simulated real workplace or an appropriate simulated realistic environment in which plumbing operations are carried out.
4. Tools and equipment may include but are not limited to soldering irons, files, blue torch, blue lamp, scriber, steel rule, tin snips, hammers, steel brush, vice grip, pliers, LP (Low Pressure) gas bottles.
5. Materials may include but are not limited to galvanised sheet metal, soldering sticks, sal ammoniac stones, cloth, fluxes, hydrochloric acid, hand cleaner, copper pipes, capillary fittings, LP gas.
6. Performance of all elements in this unit standard must comply with all relevant workplace requirements and/or manufacturers' specifications.
7. Regulations and legislation relevant to this unit standard include the following:
  - Labour Act, No. 6, 1992
  - Occupational Health and Safety Regulations No. 18, 1997
 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 on [www.nta.com.na](http://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 and hazards and determination of work requirements.

#### **Performance Criteria**

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied in line with workplace procedures.
- 1.2 Safety requirements are followed in line with workplace procedures.
- 1.3 Sign and barricade requirements are identified and implemented in line with workplace procedures.
- 1.4 Tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults rectified or reported prior to commencement.
- 1.5 Material quantity requirements are calculated in accordance with plans and/or specifications.
- 1.6 Materials appropriate to the work application are identified, obtained, prepared, safely handled and located, ready for use in line with workplace procedures.
- 1.7 Environmental protection requirements are identified and applied in accordance with environmental plans and regulatory obligations.

## **Element 2: Perform soft soldering operations**

### **Performance criteria**

- 2.1 Soft soldering tools, equipment and materials are assembled and set up according to specifications and workplace procedures.
- 2.2 Safety precautions are observed during the soft soldering process in line with safety and workplace procedures.
- 2.3 Equipment is tested before commencement of soft soldering in line with workplace procedures.
- 2.4 Soft soldering procedures are conducted to specifications.
- 2.5 Joints are cleaned using appropriate tools and techniques in line with workplace procedures.
- 2.6 Safety requirements on use and handling of soldering tools, equipment and the materials including the use of PPE (Personal Protective Clothing) are observed.

## **Element 3: Conduct post soldering visual inspection**

### **Performance criteria**

- 3.1 Visual inspection of soft soldering is conducted in line with workplace procedures.
- 3.2 Joints are inspected for penetration, porosity, accuracy of measurements and quality in line with workplace procedures.
- 3.3 Faults are identified and corrected in line with workplace procedures.

## **Element 4: Clean up work area**

### **Performance criteria**

- 4.1 Work is completed and appropriate personnel notified in line with workplace procedures.
- 4.2 Work area is cleared of waste, cleaned, restored and secured in line with workplace procedures.
- 4.3 Plant, tools and equipment are cleaned, checked and maintained in line with workplace procedures.

## **Registration Data**

<b>Subfield:</b>	General Construction
<b>Date first registered:</b>	15 November 2007
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<b>Body responsible for review:</b>	Namibia Training Authority