

<b>Domain</b>	<b>METAL FABRICATION-WELDER</b>	<b>Unit ID: 256</b>
<b>Title:</b>	<b>Hard face surfaces as part of metal fabrication operations</b>	
<b>Level: 4</b>		<b>Credits: 4</b>

### Purpose

This unit standard specifies the competencies required to hard face surfaces as part of metal fabrication operations. It includes the preparation of materials, hard facing surfaces and components in a flat position, as well as completion of work and cleaning up. This unit standard is intended for those who work as welders.

### Special Notes

1. Entry information

Prerequisite:

- *Unit 228* - Apply safety rules and regulations in a metal fabrication work environment or demonstrated equivalent knowledge and skills.
2. To demonstrate competence, at a minimum, evidence is required of hard facing four work pieces in a flat position. These tasks should be performed ensuring correct identification of requirements and finishing of the tasks, correct selection and use of appropriate processes, tools and equipment and completing all work to specification.
  3. Assessment evidence may be collected from a real workplace or simulated real workplace or an appropriate simulated realistic environment in which metal fabrication operations are carried out.
  4. Performance of all elements in this unit standard must comply with manufacturers' specifications and workplace specific requirements.
  5. '*Specifications*' refers to any, or all of the following: manufacturers' specifications and recommendations, site and workplace specific requirements.
  6. Work pieces are to include stainless steel, aluminium, mild steel and cast iron.
  7. Regulations and legislation relevant to this unit standard include the following:
    - Labour Act 6 of 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: Prepare materials and equipment**

#### **Range**

Preparation of materials is to include pre-heating, setting up of jigs, fixtures and clamps.

Test procedures may include voltage drop, amperage setting, earthing, electrode and wire conductivity, electrode flux condition.

#### **Performance Criteria**

- 1.1 Hard facing requirements are identified from specifications and drawings.
- 1.2 Material is prepared using tools and techniques.
- 1.3 Materials are assembled and aligned to specification as required.
- 1.4 Equipment is assembled and set up safely and in line with workplace procedure.
- 1.5 Hard facing electrodes are identified and set against predetermined specifications and welding procedures.
- 1.6 Test runs are undertaken and verified in accordance with specifications.

### **Element 2: Hard face surfaces in a flat position**

#### **Performance Criteria**

- 2.1 Appropriate safety clothing and personal protective equipment is used in line with workplace procedures.
- 2.2 Surfaces and components are hard faced to specifications and requirements.
- 2.3 Surfaces are visually inspected for correctness and quality in line with specified methods.
- 2.4 Surfaces and components are cleaned in line with workplace procedures.

### **Element 3: Complete work and clean up**

#### **Performance Criteria**

- 3.1 Work is completed and appropriate personnel notified in accordance with workplace procedures.
- 3.2 Work area is cleared of waste, cleaned, restored and secured in line with workplace procedures.
- 3.3 Tools and equipment are cleaned, checked, maintained and stored in line with workplace procedures.
- 3.4 Work completion details are finalised in line with workplace procedures.

#### **Registration Data**

<b>Subfield:</b>	Mechanical Engineering
<b>Date first registered:</b>	29 March 2007
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<b>Body responsible for review:</b>	Namibia Training Authority