

**Domain****MINERAL PROCESSING****Title:****Operate a crushing plant****Level: 3****Credits: 12****Purpose**

This unit standard is intended for those who carry out metallurgical processing operations. People holding credit for this unit standard are able to: Plan and prepare to operate a crushing plant; demonstrate knowledge relating to crushing operations; carry out pre-start checks to static crushing plant; test plant operation and check settings; operate static crushing plant; complete shut-down procedures; and complete duties pertaining to the crushing process.

**Special Notes**

1. Entry information:

Prerequisite

- 1449 - *Comply with health, safety and environmental rules and regulations pertaining to processing operations; or demonstrated equivalent knowledge and skills.*

2. Assessment evidence may be collected from a real workplace or a simulated workplace in which processing operations are carried out.

3. 'Crushing' refers to primary and all subsequent crushing processes.

4. Safe working practices include day-to-day observation of safety policies and procedures and compliance with emergency procedures.

5. Specifications refer to any, or all of the following: manufacturer's specifications and recommendations, and workplace specific requirements.

6. Performance of all elements in this unit standard must comply with relevant regulatory, legislative, workplace requirements and/or manufacturers' specifications.

7. Regulations and legislation, including subsequent amendments, relevant to this unit standard may include but are not limited to the following:

- Labour Act, No. 11, 2007
- Mineral Act, No. 33, 1992
- Mine Health and Safety Regulations, 1999
- Regulations relating to the Health and Safety of employees at work, 1997 and all industry specific regulations, legislations, code of practice, or code of conduct.

**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](http://www.nta.com.na).

## **Elements and Performance Criteria**

### **Element 1: Plan and prepare to operate a crushing plant**

#### **Range**

Work instructions, specifications, quality requirements and operational details may include but are not limited to crushing plant daily schedule; size and type of materials to be crushed.

Personal protective equipment may include but is not limited to overalls; safety boots; gloves; safety glasses; earmuffs; hardhat; and dust protection.

Communication methods may include but are not limited to signals and use of two way radios.

#### **Performance Criteria**

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, explained, clarified and applied to the allocated task.
- 1.2 Safety and security requirements, including personal protective clothing and equipment are obtained from the site safety plan, workplace policies and procedures, explained, and applied to the allocated task.
- 1.3 Plant, tools, fuel, lubricants, equipment, attachments and accessories selected to carry out tasks are checked for consistency with the requirements of the job, their usability and any faults rectified or reported prior to commencement of work.
- 1.4 Communication methods are determined according to workplace procedures and manufacturer's requirements.
- 1.5 Environmental protection requirements are identified from the project environmental management plan and applied to the allocated task.
- 1.6 Work area is inspected and prepared according to workplace procedures.

### **Element 2: Demonstrate knowledge relating to crushing operations**

#### **Performance Criteria**

- 2.1 The actions and conditions pertaining to a safe, healthy environment when operating a crushing plant are described.

- 2.2 The importance of operating a crushing plant is described in terms of achieving specified production requirements.
- 2.3 Hazards and associated risks are identified through relevant risk assessment procedures.
- 2.4 Corrective actions, in case of sub-standard conditions and problems be encountered, are described.

### **Element 3: Carry out pre-start checks to static crushing plant**

#### **Performance Criteria**

- 3.1 Workplace hazards and associated risks are identified, minimised or eliminated according to workplace procedures and legislative requirements.
- 3.2 Pre-start checks on crushing plant and equipment are carried out in accordance with workplace procedures and manufacturer's specifications.
- 3.3 Visual checks of machinery are conducted to identify mechanical problems according to workplace procedures and manufacturer's specifications.
- 3.4 Emergency stops and fail-safe devices are checked according to workplace procedures and manufacturer's specifications.

### **Element 4: Test plant operation and check settings**

#### **Performance Criteria**

- 4.1 Crushing plant and equipment are operated and tested according to workplace procedures.
- 4.2 Conveyors, screens and other ancillary equipment are operated and checked in accordance with manufacturer's specifications and plant configuration.
- 4.3 Material is test-crushed through plant and product is checked for compliance with specifications.

### **Element 5: Operate static crushing plant**

#### **Range**

Monitoring may include but is not limited to bearing temperatures; feed rates to and from crusher; blockages; and re-set of overloads.

Safe operating procedures may include but are not limited to emergency procedures; hazards; blockages; machinery defects; and lighting.

#### **Performance Criteria**

- 5.1 Conveyors, screens and other ancillary equipment are operated in accordance with manufacturer's specifications, plant configuration and workplace procedures.
- 5.2 Crusher operation is monitored in accordance with manufacturer's specifications and workplace procedures.

- 5.3 Screen sizing is monitored and maintained to ensure compliance with product specifications in accordance with workplace procedures.
- 5.4 Machinery loads are monitored to ensure that they remain within specified capacities in accordance with manufacturer's specifications and workplace procedures.
- 5.5 Procedures for safe operating of crushing plant are followed according to manufacturer's specifications and workplace procedures.

**Element 6: Complete shut-down procedures**

**Range**

Shut-down procedures may include but are not limited to clear feed hopper and run out materials through plant.

**Performance Criteria**

- 6.1 Crusher operation is sequentially shut down according to workplace procedures and manufacturer's requirements.

**Element 7: Complete duties pertaining to the crushing process**

**Range**

Housekeeping may include but is not limited to ensure the work area is ready for next user; remove work materials to designated locations; correctly identify waste and re-usable material; and remove waste and re-usable materials to designated locations.

**Performance Criteria**

- 7.1 Task-specific tools, personal protective and safety equipment, are cleaned, maintained and stored for further use according to workplace procedures.
- 7.2 Good housekeeping practices are maintained according to workplace procedures.
- 7.3 Reporting and recording requirements are met according to workplace procedures.
- 7.4 Work related documents are completed according to job requirements and workplace procedures.

**Registration Data**

<b>Subfield:</b>	Metallurgy
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