

Unit ID: 1488

Domain
Title:

METALLURGICAL PROCESSING - CORE
**Operate and control recyclable water
systems in a metallurgical plant**

Level: 4

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 for operating recyclable water systems; demonstrate knowledge relating to the operation and control of recyclable water systems; operate and control recyclable water systems; and complete duties pertaining to the operation of recyclable water systems.

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

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

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

6. 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.

Elements and Performance Criteria

Element 1: Plan and prepare for operating recyclable water systems

Performance Criteria

- 1.1 Work instructions, including plans, quality requirements, handling procedures and operational details are obtained, explained, clarified and applied to the allocated task.
- 1.2 Safety and security requirements, including personal protective clothing, warning signs, alarms, fire fighting, water isolation, and power isolation procedures are obtained from the site safety plan, workplace policies and procedures, explained, and applied to the allocated task.
- 1.3 Specifications for operating recyclable water systems and specified equipment are identified and their functions explained.
- 1.4 Equipment, tools, 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.
- 1.5 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 the operation and control of recyclable water systems

Range

Operational characteristics and performance may include but is not limited to pump types; valves; pipelines; structures; pump-houses; controls; inlets; pipe couplings; discharge; filters; screens; drainage; pond; reservoirs; tanks; weirs; power source and supply; topography; water circuits; and diesel generator pumps.

Pump and pipeline calculations may include but are not limited to pump curves; hydraulic gradient; system resistance; suction head; static pressure; static head; velocity head; flow rates; and discharge.

Performance Criteria

- 2.1 The actions and conditions pertaining to a safe, healthy environment when operating recyclable water systems are described.
- 2.2 The operational characteristics and performance of recyclable water systems in terms of pumps and pumping systems are described.

- 2.3 The pump and pipeline calculations required for recyclable water systems are described.
- 2.4 The importance of operating and controlling recyclable water systems is described in terms of achieving specified production requirements.
- 2.5 Hazards and associated risks are identified through relevant risk assessment procedures.
- 2.6 The communication requirements pertaining to operating recyclable water systems are described.
- 2.7 Corrective actions, in case of sub-standard conditions and problems be encountered, are described.

Element 3: Operate and control recyclable water systems

Range

Operating procedures may include but are not limited to start-up and shut-down; priming; inlet gates; pond level adjustments; flow rate and volume; water flow diagram; slimes control; quality control; and makeup water.

Control and monitoring systems may include but are not limited to water take-up; water discharge; water quality monitoring; losses to ground; tailings disposal; aqua life protection; temperature; sampling; and water treatment.

Performance Criteria

- 3.1 Workplace hazards and associated risks are identified, minimised or eliminated according to workplace procedures and legislative requirements.
- 3.2 The operating procedures required for recyclable water systems are demonstrated according to workplace procedures and environmental protection requirements.
- 3.3 The checks, adjustments, control and monitoring procedures are demonstrated according to workplace procedures and environmental protection requirements.
- 3.4 The management of settlement ponds and other ponds are described in accordance with resource consents and workplace procedures.

Element 4: Complete duties pertaining to the operation of recyclable water systems

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

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

Registration Data

Subfield:	Metallurgy
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