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## Overview

This standard states the skills, knowledge and understanding required to demonstrate your competence in the deployment of plant and equipment for minerals processing operations. This unit covers the monitoring of plant and equipment requirements and its availability; the allocation and deployment of plant and equipment on sites and the provision of information and guidance to support those who will use it.

Plant and equipment covered by this unit may be mobile or static and relate to extractive and mineral processing operations, including health, safety, welfare or environmental equipment required for the operation of the plant and equipment.

You will require a range of knowledge and understanding including: the normal operational parameters of the plant and equipment you are allocating and deploying or re-deploying; the conditions appropriate to its safe and efficient operation and use; the servicing and maintenance schedules;; conditions applying to operators including the health and safety regulations applying to operation and maintenance.

This standard is appropriate for any person, operative or supervisory, who is involved in the deployment of any type of plant or equipment, for any type of processing operation within the extractive, mineral processing or related manufacturing industries.

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#### Performance criteria

*You must be able to:*

- P1 prepare or maintain a record of plant and equipment used to support the **processing operations** in your area of responsibility
- P2 obtain plant and equipment and check it meets requirements
- P3 check that arrangements for the security, storage, handling and operating minimise risks of loss and damage to plant and equipment
- P4 check that schedules for routine maintenance are maintained that optimise the availability of plant and equipment
- P5 check that the materials, tools and equipment required for routine maintenance and repair are available
- P6 check that a current list of maintenance and repair companies or individuals is available
- P7 ensure proposals for improving the utilisation and maintenance of plant or equipment are passed to the appropriate people
- P8 allocate and deploy sufficient plant and equipment of the type to meet operational requirements
- P9 identify and assess potential health and safety hazards, and advise on safeguards that will reduce risk
- P10 monitor work activities to ensure that plant and equipment remains suitable for the task and take appropriate action when required
- P11 communicate instructions or information to **relevant persons** for the operation or deployment of plant or equipment
- P12 maintain records according to organisational requirements
- P13 carry out work activities according to **approved policies, procedures and practices**

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### Knowledge and understanding

*You need to know and understand:*

- K1 the types and uses of plant and equipment, including their performance specifications in relation to the work activity
- K2 how to communicate plant or equipment requirements to **relevant persons**
- K3 how to prepare or maintain records of plant and equipment requirements
- K4 how to check that plant and equipment is fit for purpose
- K5 how to optimise the utilisation of plant and equipment
- K6 handling, storage and security arrangements for plant and equipment in your area of responsibility
- K7 maintenance scheduling
- K8 the statutory requirements of suppliers and operators for the maintenance, inspection, examination and testing of plant and equipment, and certification where required
- K9 the materials and tools required for routine maintenance of plant and equipment in your area of responsibility
- K10 the sources of plant, equipment and maintenance support
- K11 how to allocate and deploy plant to meet operational requirements
- K12 the hazards, risks, environmental aspects and impacts associated with the plant and equipment involved in the **processing operations**, and how these are controlled
- K13 how to assess risk
- K14 how to assess impact of variances in operating conditions on the performance of plant or equipment
- K15 how to record plant and equipment allocation, utilisation and performance
- K16 the **approved policies, procedures and practices** in the context of your work activity and your workplace environment

## Additional Information

### Scope/range

- 1 **processing operations:** must provide performance and knowledge evidence in relation to one or more of the following processing operations categories: Crushing/Screening/Washing; Drying; Concrete/Mortar Production; Asphalt/Coated Materials Production; Density/Fluid Separation; Chemical Separation; Forming; Heat Treatment; Sawing/Splitting/Shaping; Packaging; Water Monitoring
- 2 **approved policies, procedures and practices:** legislative, organisational, operational, emergency, health and safety, and environmental as appropriate to the plant or machinery and work activity
- 3 **relevant persons:** supervision; maintenance staff; other operational staff

**Glossary**

**Categories of Processing Operations for the E&MPI**

**1. Crushing/Screening/Washing**

The reduction in size of as extracted material by mechanical crushing equipment (fixed or mobile), grading by size and water washing of that material. This would also include blending or adding water to meet customer specification.

**2. Drying**

The application of heat in any type of oven to remove excess water from the as extracted or processed material

**3. Concrete/Mortar Production**

The production of concrete, mortar and similar materials, by batch (wet batch or dry batch) or continuous production. It is limited to the production of the material, and does not include the subsequent use of the material to make a product, for example a concrete block by casting/forming.

**4. Asphalt/Coated Materials Production**

The production of asphalt and other similar coated materials by any type of batch or continuous production

**5. Density/Fluid Separation**

Includes all processes to increase the purity and quality of the rock or minerals, or to separate different minerals utilising their differing physical properties (e.g. weight, density, shape, solubility), which may be a dry process or with the assistance of a fluid (e.g. air, water, other liquids).

**6. Chemical Separation**

The separation of rocks or minerals utilising their different chemical properties, or differing reactivity, which may involve the introduction of another chemical substance or substances to select the desired product. Note; this may often be combined with Density/fluid

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separation. This will also include those operations used to release the separated mineral from the separating additive

**7. Forming**

Moulding, casting, forming, compressing or similar operations to produce a solid product of a shape to meeting customer requirements or aid transportation

**8. Heat Treatment**

The application of higher levels and duration of heat to change the physical or chemical properties of the rock or mineral, e.g.s. calcining, cement production.

**9. Sawing/Splitting/Shaping**

The use of specific plant/machinery to change the physical size and/or shape of a piece of (usually) dimensional stone to meet customer requirements

**10. Packaging**

The partial or total enclosure of the rock or mineral, which would normally be done to aid storage or transportation, or to meet customer requirements.

**11. Water Monitoring**

The extraction of a mineral from a mineral body (solid or broken) or a tip/stockpile by the use of a high pressure water jet.

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