
Overview

This standard is designed to demonstrate your competence to manage the quality and quantity of rock, minerals or mineral products being processed. For quality this would involve you monitoring the material inputs, the transformation process and the quality of outputs. You will be working to a processing specification and this will involve the regular visual monitoring of the transformation process at specified stages and intervals to ensure outputs remain within specified qualitative parameters. Monitoring the quantity of materials processed is also included. During this work account must be taken of the relevant operational requirements and safe working practices.

This standard is appropriate for any person, operative or supervisory, who is required to process materials, by any type of plant or equipment, within the extractive, mineral processing or related manufacturing industries.

Performance criteria

- You must be able to:*
- P1 confirm that the materials for processing are of the type and condition specified
 - P2 check there are sufficient materials available to complete the required **processing operations**
 - P3 check that material handling equipment appropriate to the materials and process are available and operational
 - P4 check material inputs are of the quality and quantity to be processed
 - P5 confirm that instructions and specifications for the **processing operations** are available
 - P6 confirm that all services necessary for the **processing operations** are operational
 - P7 check that all control instrumentation and monitoring devices are displaying the expected information for the **processing operations**
 - P8 check that feed rates of materials comply with the specification and are within the capacity of the processing plant
 - P9 monitor the process, dealing with faults and variances in the processing operations or the quantity or quality of materials
 - P10 complete reports
 - P11 carry out work activities according to **approved policies, procedures and practices**

Knowledge and understanding

You need to know and understand:

- K1 the instructions and specifications relative to the processing requirement
- K2 how to interpret processing specifications
- K3 the types of materials to be processed and their characteristics
- K4 the conditions that must be maintained for processing the materials
- K5 the provisions that must be made for maintaining the condition of materials before, during and after processing
- K6 the visual indicators regarding the condition of material inputs and outputs
- K7 your responsibilities under health and safety legislation
- K8 the hazards and risks associated with the materials involved in the **processing operations**, and how these are controlled
- K9 the provisions that must be made for safe handling of materials
- K10 the environmental considerations associated with the **processing operations**
- K11 the on-line services necessary for maintaining the **processing operations**
- K12 the types of process control instrumentation and their purpose
- K13 the types and purposes of process monitoring devices, and methods for verifying accuracy of these
- K14 the methods of identifying faults and variances during **processing operations**
- K15 the precautions to be taken during **processing operations**
- K16 the means and method of monitoring quantity and quality
- K17 the methods of recording quantities and quality of materials processed
- K18 the **approved policies, procedures and practices** in the context of your operations, 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

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

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.

MPQPO07

Process materials to specification

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