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## Overview

This standard identifies the competences you need to monitor engineering activities, in accordance with approved procedures. You will be required to monitor, at suitable intervals, the engineering activity and the supply and use of resources, both within the company and/or at customer premises. In addition, you may be required to monitor suppliers and contractors associated with the activity. During the monitoring process, you will be required to confirm that the engineering methods used are appropriate, and that the outputs and materials used are within the required specification.

Your responsibilities will require you to comply with organisational policy and procedures for the engineering activities being monitored, and to report any problems that you cannot personally resolve, or that are outside your permitted authority, to the relevant people. You will be expected to work with a minimum of supervision, taking personal responsibility for your own actions and for the quality and accuracy of the work that you carry out.

Your underpinning knowledge will include organisational procedures and discipline-specific engineering principles and processes, within your area of responsibility. This will provide a good understanding of your work, and will provide an informed approach to applying monitoring procedures to engineering activities. You will be conversant with the relevant organisational and quality assurance procedures within your area of responsibility. You will also have an underpinning knowledge of resource management principles, quality assurance principles and problem solving techniques, in adequate depth to provide a sound basis for carrying out the monitoring activities to the required standards.

You will be aware of any company/customer, legislative or regulatory health, safety and environmental requirements applicable to the engineering activities being monitored. You will be required to demonstrate safe working practices throughout, and will understand the responsibility you owe to yourself and others in the workplace.

**Performance  
criteria**

*You must be able to:*

- P1 monitor the engineering process at suitable opportunities
- P2 monitor the supply and use of resources to ensure that they are effectively used
- P3 confirm that the materials used during the engineering process comply with specifications
- P4 confirm that suitable engineering methods and procedures have been used
- P5 identify any variations from agreed plans and schedules
- P6 ensure that any problems with the engineering process are identified
- P7 ensure that the outputs of the engineering process comply with specifications
- P8 ensure that the engineering process complies with all relevant regulations and guidelines

## Knowledge and understanding

*You need to know and understand:*

- K1 how to access information on health and safety regulations, directives and guidelines relating to the engineering activities to be monitored
- K2 the specific regulations, directives and guidelines that are relevant to the activities being monitored
- K3 the specific safety precautions to be taken when carrying out the monitoring and associated activities
- K4 the personal protective equipment (PPE) to be worn in the specific work area, and where this can be obtained
- K5 the implications of not taking account of legislation, regulations, standards and guidelines when carrying out the monitoring activities
- K6 the organisational procedures for determining when monitoring should occur, and how it should be undertaken
- K7 the monitoring methods and procedures that should be used for the types of engineering activity within your area of responsibility
- K8 the potential variations from plans and schedules that might occur during monitoring
- K9 the processes and specifications of the activity being monitored
- K10 the quality assurance systems that are being used
- K11 the types of problem that could occur with the monitoring process, and the organisational methods and procedures for resolving them
- K12 the importance of solving problems quickly
- K13 how to check the outputs of the monitoring process against the specified inputs
- K14 the procedures for obtaining information on resources
- K15 how to assess the need for resources
- K16 how to verify that resources are suitable, and are available within or to the organisation
- K17 the importance of maintaining records of the monitoring activities
- K18 the types of information to be recorded, and the amount of detail that is required
- K19 where records are kept, and the procedure for obtaining them
- K20 the importance of ensuring that any records that you use are correctly updated and returned to the appropriate location
- K21 the importance of customer care and satisfaction
- K22 the different ways of presenting information to different people
- K23 the organisational reporting processes and lines of communication
- K24 the extent of your own responsibility, and to whom you should report if you have problems that you cannot resolve
- K25 the sources of technical expertise if you have problems that you cannot resolve

## Additional Information

### Scope/range related to performance criteria

- You must be able to:*
- 1 Carry out **all** of the following during the monitoring activities:
    - 1.1 obtain the necessary specifications and documents required for the monitoring process
    - 1.2 obtain approval to carry out the monitoring activities
    - 1.3 ensure that all appropriate personnel are fully informed of your intended activities
    - 1.4 use appropriate personal protective equipment (PPE) for the area in which you are carrying out the monitoring activities
    - 1.5 apply safe working practices and procedures at all times
    - 1.6 ensure that by-products and waste are disposed of correctly
    - 1.7 follow the defined monitoring procedures at all times
  - 2 Carry out the monitoring activities on **one** of the following engineering activities:
    - 2.1 drawing/design activities (such as mechanical, electrical/electronic, motor vehicle, aerospace, marine)
    - 2.2 manufacturing activities (such as machining, detail fitting, fabrication of components, pressing)
    - 2.3 material processing activities (such as heat treatment, casting, injection moulding, purification)
    - 2.4 composite manufacture (such as wet lay-up, pre-preg laminating, resin infusion, blow moulding)
    - 2.5 finishing activities (such as stripping finishes, painting, plating, anodising, veneering, lacquering)
    - 2.6 assembly activities (such as mechanical, structural, fluid power, electrical/electronic, woodworking)
    - 2.7 installation activities (such as mechanical, electrical/electronic, avionic, structural, environmental equipment)
    - 2.8 plant and equipment (such as site preparation, plant layout, equipment changeover, equipment replacement)
    - 2.9 equipment capability studies/performance measurement
    - 2.10 movement of materials, components or finished goods
    - 2.11 engineering safety audits or risk assessments
    - 2.12 business improvement activities
    - 2.13 quality control/quality assurance
    - 2.14 maintenance activities
    - 2.15 modification and repair activities
    - 2.16 commissioning/decommissioning

## Monitor engineering activities

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- 2.17 testing and trialling
- 2.18 research and development
- 2.19 engineering support services
- 3 Obtain relevant information from the appropriate sources, to include **two** of the following:
  - 3.1 work orders
  - 3.2 planning documentation
  - 3.3 contracts
  - 3.4 quality standards
  - 3.5 plans/designs
  - 3.6 equipment or materials supplier information
  - 3.7 purchase orders
  - 3.8 schedules
  - 3.9 standard operating procedures
  - 3.10 production control documentation
- 4 During the monitoring activity, carry out **all** of the following:
  - 4.1 ensure that there is an effective supply and use of resources (such as people, materials, equipment)
  - 4.2 verify that materials or equipment used are within specification
  - 4.3 evaluate the outputs of the engineering process, and compare these with specifications
  - 4.4 record any deviations from agreed plans and schedules
  - 4.5 confirm that all relevant regulations and guidelines are complied with
  - 4.6 ensure that relevant people are kept informed
- 5 Monitor the engineering activity, using **two** of the following approaches:
  - 5.1 scheduled
  - 5.2 random
  - 5.3 reactive
- 6 Carry out **two** of the following during the monitoring activity:
  - 6.1 observation
  - 6.2 data collection
  - 6.3 sampling
  - 6.4 consultations with relevant people
- 7 Carry out **all** of the following on completion of the monitoring activities:
  - 7.1 validation and evaluation of the monitoring systems and procedures used
  - 7.2 suggested improvements to your process of monitoring the engineering activity
  - 7.3 recommendations for improvements or changes to the

engineering activities that were monitored

- 8 Ensure that the process being monitored complies with relevant regulations, standards and guidelines from **three** of the following:
  - 8.1 organisational guidelines and codes of practice
  - 8.2 customer standards and requirements
  - 8.3 equipment manufacturer's operation specification/range
  - 8.4 British, European or International standards or directives
  - 8.5 recognised compliance agency/body's standards
  - 8.6 health, safety and environmental requirements
  
- 9 Communicate the outcomes of the monitoring activity to the relevant people, using the following methods:
  - 9.1 specific company documentationPlus **one** more method from the following:
  - 9.2 computer generated report
  - 9.3 verbal report
  - 9.4 computer-based presentation
  - 9.5 other specific media

## SEMENG308

### Monitor engineering activities

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<b>Relevant occupations</b>	Managers and Senior Officials; Engineering and manufacturing technologies; Engineering; Functional Managers
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<b>Suite</b>	Engineering Leadership suite 3
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<b>Key words</b>	Engineering; leadership; monitoring; activities; sampling; data collection; equipment; materials; people; facilities
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