

## Determine the requirements for engineering activities

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### Overview

This standard identifies the competences you need to determine the requirements for engineering activities, in accordance with approved procedures. The range of engineering processes could include manufacturing operations, installation, production, maintenance, engineering support functions or other activities, such as performance measurement or business improvement. You will be required to interpret the requirements, to specify the quality criteria and to facilitate any necessary changes to the engineering activities.

Your responsibilities will require you to comply with organisational policy and procedures for ensuring the successful determination of engineering requirements, and to report any problems that you cannot personally resolve to the relevant authority. You will be expected to work unsupervised, either on your own or as part of a team, which you may lead or direct, taking full responsibility for your actions, and possibly for the work of colleagues or subordinates.

Your underpinning knowledge will provide a good understanding of general and discipline-specific engineering principles and processes. You will be fully conversant with organisational procedures and systems. You will understand quality assurance principles and systems, and the appropriate specifications, details and formats, in adequate depth to provide a sound basis for carrying out the activities to the required standard.

You will be fully aware of any health, safety and environmental requirements, and the appropriate legislative and regulatory frameworks applicable to your area of responsibility. You will be required to ensure that safe working practices are maintained throughout, and will understand the responsibility you owe to yourself and others in the workplace.

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### Performance criteria

#### You must be able to:

1. work safely at all times, complying with health and safety and other relevant regulations, directives and guidelines
2. obtain accurate details of the engineering products or processes
3. review and interpret the specification requirements of the engineering products or processes to assess their characteristics
4. clarify aspects of the engineering products or processes that are unclear
5. specify the quality criteria for the engineering products or processes
6. identify and confirm any changes to the engineering products or processes required to achieve the required outcomes
7. ensure that the requirements comply with all relevant regulations, directives and guidelines
8. record the requirements in the appropriate information systems

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### Knowledge and understanding

#### You need to know and understand:

1. the health, safety and environmental requirements applicable to the engineering activities to be carried out
2. how to obtain details of engineering requirements from company information systems
3. how to interpret drawings, charts, specifications, information, data, reports, manuals and other documents needed to understand the requirements of the engineering activity
4. the critical characteristics of engineering activities
5. the methods and techniques for assessing and clarifying aspects of engineering activities that could be unclear
6. the quality criteria that apply to the particular engineering activity
7. how to identify and interpret changes to requirements for engineering activities
8. whom to contact for clarification of the engineering requirements
9. who should authorise any changes to engineering activities
10. the different methods that relate to engineering activities within your area of responsibility
11. how to predict and resolve potential problems with the engineering activities
12. how to specify and communicate engineering requirements to others
13. the importance of using the company information systems
14. the information systems that are in use within your organisation, and how to record data to the system
15. how to obtain and interpret legislative and regulatory documentation
16. how to obtain and interpret company policy and procedures
17. the relevant reporting procedures, documentation and their application
18. whom to inform of actions taken, and by what means
19. the extent of your own responsibility and to whom you should report if you have problems that you cannot resolve

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## Scope/range related to performance criteria

1. Carry out **all** of the following when determining the requirements for engineering activities:
  1. obtain details of the required engineering activity
  2. review the critical requirements and quality criteria of the activity
  3. clarify with relevant people any aspects of the activity that are unclear
  4. discuss and facilitate any changes needed to suit the engineering requirements, with the relevant people
  5. ensure that methods and procedures to be used meet relevant regulations and guidelines
  6. define the engineering requirements and communicate them to the relevant people
2. Determine requirements for **one** of the following engineering activities:
  1. manufacturing (such as machining, fabrication, welding, material finishing or manufacture, assembly, joining)
  2. design
  3. research
  4. product or system installation
  5. commissioning
  6. decommissioning or recycling
  7. environmental or sustainability
  8. operational processes (such as movement of materials and logistics)
  9. maintenance practices (such as preventative, corrective, predictive, reactive or prevention)
  10. processing operations
  11. service supplies (such as gas, water, electricity)
  12. engineering support functions (such as procurement, quality assurance, inspection, testing, scheduled safety audits and risk assessments, business improvement)
3. Establish requirements for **one** of the following:
  1. equipment/component/system capacity or capability
  2. equipment/component/system performance
  3. equipment/component/system life cycles
  4. maintenance and repair
  5. people performance
  6. people capacity or capability

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7. product or process quality
  8. supplier capacity or capability
  9. business support function capacity or capability
4. Obtain accurate details of the requirements for the engineering activity, from **two** of the following sources:
    1. design office
    2. sales department
    3. the client
    4. production engineering
    5. safety engineering
    6. contractors/specialists
    7. process engineering
    8. plant engineering
    9. component/product manufacturers
    10. quality engineering
    11. industrial engineering
    12. material/component supplier
    13. human resources (HR) personnel
5. Identify the methods, quality criteria and plans to be used, covering **two** of the following:
    1. processing parameters
    2. commissioning
    3. installation
    4. servicing, maintenance and repair
    5. equipment preparation/selection
    6. people responsibilities
    7. product/process monitoring
    8. financial monitoring
    9. feedback/communication
    10. scheduling/planning
    11. movement of equipment/resources
    12. configuring/reconfiguring
    13. inspection or testing
    14. purchasing
    15. stock control
    16. logistics
    17. business improvements
    18. staff development
    19. infrastructure requirements
    20. safety checks/procedures
    21. co-ordinating contracts
6. Ensure that the requirements comply with **three** of the following:
    1. organisational guidelines and

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- procedures
  2. recognised compliance agency/body standards, directives or codes of practice
  3. equipment manufactures operating specification/range
  4. British, European or International standards or directives
  5. health, safety and environmental requirements
  6. statutory bodies' requirements
7. Agree and confirm any changes required with **two** of the following:
1. design department
  2. production department
  3. installation/commissioning team
  4. purchasing/buying department
  5. quality/inspection department
  6. contracting department
  7. sales/marketing department
  8. customer
  9. supplier
  10. other specific personnel
8. Record and communicate the requirements to the appropriate people, using:
1. a verbal report
- plus **one** from the following:
2. electronic mail
  3. computer-based presentation
  4. computer generated report
  5. specific company document
  6. other appropriate media

## Behaviours

# Additional Information

You will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as:

- strong work ethic
- positive attitude
- team player
- dependability
- responsibility
- honesty
- integrity
- motivation
- commitment

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