
Overview

This standard identifies the competences you need to implement quality control systems and procedures in an engineering environment, in accordance with approved procedures. You will be required to establish precise criteria to enable you to assess the quality of engineering products or processes, such as for component manufacturing, assembly activities, fabrication and welding, casting and patternmaking, materials processing and finishing, installation activities, repair and modifications, maintenance, commissioning and de-commissioning. You will also be expected to determine and communicate the quality assurance recommendations to all relevant people.

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

Your underpinning knowledge will provide a good understanding of your work and will enable you to have an informed approach to the implementation of quality control systems. You will understand your organisation's methods of operation and quality control systems, in sufficient detail to enable you to make informed decisions and to carry out the implementation to the required standard.

You will be aware of any health, safety and environmental requirements applicable to the products and processes, and to the quality control activities. 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:

1. work safely at all times, complying with health and safety legislation, regulations, directives and other relevant guidelines
2. obtain accurate information on the engineering products or processes that are to be quality controlled
3. establish clear and precise criteria for the quality control activities to be undertaken
4. initiate the quality control system, using approved techniques and methods and procedures
5. monitor the effectiveness of the quality control system implemented
6. deal promptly and effectively with problems within your control, and seek help and guidance if you have problems that you cannot resolve
7. provide information on the quality control activities to the relevant people

Knowledge and understanding

You need to know and understand:

1. how to access information on health and safety regulations and guidelines relating to the engineering activities to be quality assured
2. the specific regulations and guidelines that are relevant to the activities being quality assured
3. the specific safety precautions to be taken when carrying out the quality assurance and associated activities
4. the personal protective equipment (PPE) to be worn in the specific work area that the quality assurance activities are taking place
5. where the required personal protective equipment can be obtained
6. the implications of not taking account of legislation, regulations, standards and guidelines when carrying out the quality assurance activities
7. the organisational procedures for determining when and how quality assurance activities should be undertaken
8. the processes and specifications for the activity being quality assured
9. how to obtain the quality criteria that could be used for different types of engineering products or processes
10. the current quality assurance methods that are in use
11. the methods for obtaining information on the engineering products or processes that are to be quality assured
12. the relevant sources of information on engineering products or processes
13. the people who should be involved in the quality assurance process
14. the impact that quality assurance methods have on the organisation
15. the people who require information on quality assurance, and the procedures for informing them
16. the types of recommendation that could emerge from the quality assurance process
17. how to present the quality recommendations, and the formats to be used
18. how to ensure that quality improvement recommendations are followed up
19. the importance of making sure that all information used is accurate
20. the importance of maintaining quality assurance records
21. the information that needs to be recorded, and the amount of detail that is required
22. where quality assurance records are kept, and the procedure for obtaining them
23. the importance of ensuring that any records that you use are correctly updated and returned to the appropriate location
24. problems that could occur with the quality assurance process, and

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- the organisational methods and procedures for resolving them
 - 25. the importance of solving problems quickly
 - 26. the organisational reporting processes and lines of communication
 - 27. the extent of your own authority, and whom you should report to in the event of problems that you cannot resolve
 - 28. the sources of technical expertise if you have problems that you cannot resolve

Scope/range

1. Carry out all of the following during the quality control activities:
 1. adhere to procedures or systems in place for risk assessment, COSHH, and other relevant safety regulations
 2. obtain the required quality control specifications and related documents
 3. obtain approval to carry out the quality control activities
 4. ensure that all appropriate personnel are fully informed of your intended activities
 5. use appropriate personal protective equipment for the area in which you are carrying out the quality control
 6. ensure that test results and quality records are stored, in a manner suited to future audit or investigation
2. Implement quality assurance procedures for one of the following engineering activities:
 1. drawing/design activities (such as mechanical, electrical/electronic, motor vehicle, aerospace, marine)
 2. manufacturing activities (such as machining, detail fitting, fabrication of components, pressing)
 3. material processing activities (such as heat treatment, casting, injection moulding, purification)
 4. composite manufacture (such as wet lay-up, pre-preg laminating, resin infusion, blow moulding)
 5. finishing activities (such as stripping finishes, painting, plating, anodising, veneering, lacquering)
 6. assembly activities (such as mechanical, structural, fluid power, electrical/electronic, woodworking)
 7. installation activities (such as mechanical, electrical/electronic, avionic, structural, environmental equipment)
 8. plant and equipment (such as site preparation, plant layout, equipment changeover, equipment replacement)
 9. equipment capability studies/performance measurement
 10. movement of materials, components or finished goods
 11. engineering safety audits or risk assessments
 12. business improvement activities
 13. quality control/quality assurance
 14. maintenance activities
 15. modification and repair activities
 16. commissioning/decommissioning
 17. testing and trialling
 18. research and development
 19. engineering support services
3. Carry out all of the following, in preparation for the quality control activity:
 1. identify the product or process requiring quality control

2. obtain the criteria for the quality control process
3. identify suitable quality control methods, techniques and procedures
4. obtain appropriate documentation, tools and equipment for the quality control activities to be undertaken
5. demonstrate and recommend the quality control process to the appropriate people
4. Obtain suitable information about the product or process requiring quality control, from two of the following:
 1. quality assurance staff
 2. product specifications
 3. manufacturers' manuals/specifications
 4. regulations and guidelines
 5. engineering drawings
 6. international/national standards
5. Identify suitable methods and procedures for quality control, to include two of the following:
 1. material checks
 2. product or equipment safety checks (such as electrical checks)
 3. production process inspection
 4. contractor guidelines
 5. maintenance procedures
 6. incoming inspection
 7. customer contracts
 8. product performance attributes
 9. other specific method/procedure
6. Carry out all of the following on completion of the quality control activities:
 1. validation and evaluation of the quality control systems implemented
 2. suggested improvements to the way in which the quality control systems are implemented
 3. identification of improvements to be made to the quality control systems and procedures
7. Ensure that the quality control recommendations comply with one of the following:
 1. organisational guidelines and codes of practice
 2. health, safety and environmental requirements
 3. customer standards and requirements
 4. BS and/or ISO standards
8. Produce and recommend quality control processes to the relevant people, using the following methods:
 1. specific organisation documentation

Plus one more method from the following:

2. verbal report
3. written or typed report

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4. electronic mail
 5. computer-based presentation

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