

Working efficiently and effectively in engineering

Overview

This standard identifies a range of basic competences that will prepare you for entry into the engineering or manufacturing sectors, creating a progression between education and employment, or that will provide a basis for the development of additional skills and occupational competences in the working environment.

Prior to undertaking the engineering activity, you will be required to carry out all necessary preparations within the scope of your responsibility. This will include preparing the work area and ensuring that it is in a safe condition to carry out the intended activities. You will need to obtain the appropriate job documentation, work instructions, tools, equipment and materials for the work activities to be undertaken, and to check that they are in a safe and usable condition.

On completion of the engineering activity, you will be required to return your immediate work area to an acceptable condition before undertaking further work requirements. This may involve placing part-completed or completed work in the correct location, returning and/or storing any tools and equipment in the correct area, removing any waste and/or scrapped materials, and reporting any defects or damage to tools and equipment used.

In order to be efficient and effective in the workplace, you will also be required to demonstrate that you can create and maintain effective working relationships with colleagues and supervisors, and review objectives and targets for your personal development.

Your responsibilities will require you to comply with health and safety requirements and organisational policy and procedures for the activities undertaken. You will need to report any difficulties or problems that may arise with the engineering activities, and to carry out any agreed actions. You will work under a high level of supervision, whilst taking responsibility for your own actions and for the quality and accuracy of the work that you carry out.

Your underpinning knowledge will provide an understanding of your work, and will provide an informed approach to working efficiently and effectively in an engineering environment. You will understand the need to work efficiently and effectively, and will know about the items that you need to consider when preparing and tidying up the work area. You will know how to deal with problems, maintain effective working relationships, and agree your development objectives and targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

You will understand the safety precautions required when carrying out the specific engineering 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.

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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. prepare the work area to carry out the engineering activity
3. obtain all necessary tools and equipment, and check that they are in a safe and usable condition
4. report any difficulties or problems that may arise, and carry out any agreed actions
5. maintain effective working relationships with colleagues and supervisors
6. assist in the review of your personal training and development, as appropriate to the job role
7. tidy up the work area on completion of the engineering activity

Knowledge and understanding

You need to know and understand:

1. the safe working practices and procedures to be followed whilst preparing and tidying up your work area
2. how to present yourself in the workplace, suitably dressed for the activities to be undertaken (such as being neat, clean and dressed in clothes which are appropriate to the area of activity; ensuring that, if you have long hair, it is tied back or netted; and removing any jewellery or other items that can become entangled in the machinery)
3. the personal protective equipment (PPE) to be worn for the engineering activities undertaken (such as correctly fitting overalls, safety shoes, eye protection, ear protection)
4. the correct use of any equipment used to protect the health and safety of yourself and your colleagues
5. the procedure for ensuring that all tools, equipment, materials and documentation relating to the work being carried out is available, prior to starting the activity
6. the checks to be carried out to ensure that tools and equipment are safe to use, and in full working order, prior to undertaking the activity
7. the action that should be taken if tools, equipment, materials or documentation are incomplete or do not meet the requirements of the activity
8. your role in helping to develop your own skills and knowledge (such as checking with your supervisor about the work you are expected to carry out and the standard you need to achieve; the safety points to be aware of and the skills and knowledge you will need to develop)
9. the benefits of continuous personal development and the training opportunities that are available in the workplace
10. the importance of reviewing your training and development with trainers and supervisors, to think about and compare the skills, knowledge and understanding that you have at any given point with the competence you need to develop, and to set objectives to overcome any shortfall or development needs
11. the importance of maintaining effective working relationships within the workplace (such as listening attentively to instructions told to you by your supervisor, making sure that you ask for help and advice in a polite and courteous manner, responding positively to requests for help from others)
12. the reasons for informing others of your activities which may have impact on their work (such as the need to temporarily disconnect a shared resource like electricity or compressed air supply; making undue noise or creating sparks, fumes or arc flashes from welding)
13. dealing with disagreements with others in ways which will help to resolve difficulties and maintain long term relationships

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14. the organisational procedures to deal with and report any problems that can affect working relationships
15. the difficulties that can occur in working relationships, and how to resolve them
16. the sorts of attitudes and requests that are likely to create conflict or negative responses
17. the regulations that affect how you should be treated at work (such as Equal Opportunities and Equal Pay, Race Relations and Sex Discrimination, Working Time Directive, Disabled Persons Acts)
18. the need to dispose of waste materials, and consumables (such as oils and chemicals) in a safe and environmentally friendly way
19. where tools and equipment should be stored and located, and the importance of returning all tools and documentation to their designated area on completion of your work activities
20. when to act on your own initiative and when to seek help and advice from others
21. the importance of leaving the work area and equipment in a safe condition on completion of activities (such as equipment correctly isolated, cleaning the work area, and removing and disposing of waste)

Scope/range related to performance criteria

1. Ensure that you apply **all** of the following checks and practices at all times during the engineering activities:
 1. adhere to procedures or systems in place for risk assessment, COSHH, personal protective equipment (PPE) and other relevant safety regulations
 2. wear the appropriate personal protective equipment for the work area and specific activity being carried out
 3. use all tools and equipment safely and correctly, and only for their intended purpose
 4. ensure that the work area is maintained and left in a safe and tidy condition
2. Prepare to carry out the engineering activity, by carrying out **all** of the following:
 1. checking that the work area is free from hazards, and is suitably prepared for the activities to be undertaken
 2. ensuring that any required safety procedures are implemented
 3. obtaining any necessary personal protection equipment, and checking that it is in a usable condition
 4. obtaining all tools and equipment required, and checking that they are in a safe and usable condition
 5. obtaining all necessary drawings, specifications and associated documentation
 6. obtaining the correct materials or components
 7. ensuring that job instructions are understood
 8. obtaining the appropriate authorisation to carry out the work
3. Complete the work activities, to include **all** of the following:
 1. returning tools and equipment to the designated location
 2. returning drawings and work instructions
 3. disposing of waste materials in line with organisational and environmental requirements
 4. completing all necessary documentation accurately and legibly
 5. identifying and reporting, where appropriate, any damaged or unusable tools or equipment
4. Deal with problems affecting the engineering activity, to include **two** of the following:
 1. materials
 2. job specification

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3. timescales
 4. tools and equipment
 5. quality
 6. safety
 7. drawings
 8. people
 9. work activities or procedures
5. Create and maintain effective working relationships, to include carrying out **all** of the following:
1. turning up at your place of work on time and suitably dressed for the work activities to be carried out
 2. following instructions given to you, and checking out any uncertainties before you start work
 3. seeking information and assistance in a courteous and polite manner
 4. taking advice from others in a positive way
 5. dealing with disagreements in an amicable and constructive way
 6. ensuring that others nearby know about any actions you are taking which may affect their work
 7. showing respect for the views, rights and property of others
6. Contribute to developing your own engineering competence, to include **all** of the following:
1. describing the levels of skill, knowledge and understanding needed for competence in the areas of work expected of you
 2. describing your development objectives/program, and how these were identified
 3. using feedback and advice to improve your personal performance

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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