

## Overview

This standard identifies a broad 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 act as 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 required for the work activities undertaken, and to check they are in a safe and usable condition. Planning your work activities before you start them will also form part of this unit.

On completion of the engineering activity, you will be required to return your immediate work area to an acceptable condition before undertaking further work. 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 the 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. You will be expected to review objectives and targets for your personal development and to contribute to, and communicate any opportunities for, improvements that could be made to working practices and procedures.

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 take account of any potential difficulties or problems that may arise with the activities, and to seek appropriate help and advice in determining and implementing a suitable solution. 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 a good 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 you need to consider when preparing and tidying up the work area. You will know how to contribute to improvements, 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.

## 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. plan the engineering activities before you start them
3. prepare the work area for carrying out the engineering activity
4. obtain all necessary tools and equipment and check that they are in a safe and usable condition
5. deal promptly and effectively with problems within your control, and seek help and guidance from the relevant people if you have problems that you cannot resolve
6. maintain effective working relationships with colleagues and supervisors
7. review personal training and development, as appropriate to the job role
8. tidy up the work area on completion of the engineering activity
9. contribute to, and communicate opportunities for, improvement to working practices and procedures

## 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 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. planning and preparing to carry out the engineering activity (such as obtaining the appropriate drawings/documentation to be used, determining the materials required, determining the tools and equipment required, determining a suitable sequence of operations, determining the quality checks to be made and equipment to be used)
6. the procedure for ensuring that all documentation relating to the work being carried out is available, prior to starting the activity
7. the procedure for ensuring that all tools and equipment are available prior to undertaking the activity
8. the checks to be carried out to ensure that tools and equipment are in full working order, prior to undertaking the activity
9. the checks to be carried out to ensure that all materials required are correct and complete, prior to undertaking the activity
10. the action that should be taken if documentation, tools and equipment or materials are incomplete or do not meet the requirements of the activity
11. 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)
12. the benefits of continuous personal development, and the training opportunities that are available in the workplace
13. the importance of reviewing your training and development with trainers and

supervisors, of comparing the skills, setting objectives to overcome any shortfall or address any development needs

14. your responsibilities for providing evidence of your performance and progress (such as submitting work for assessment or the completion of assignments or tests)

15. the importance of maintaining effective working relationships within the workplace (such as listening attentively to instructions told to you by your supervisor, making sure you ask for help and advice in a polite and courteous manner, responding positively to requests for help from others)

16. the reason 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)

17. dealing with disagreements with others in ways which will help to resolve difficulties and maintain long term relationships

18. the organisational procedures to deal with and report any problems that can affect working relationships

19. the difficulties that can occur in working relationships, and how to resolve them

20. the sorts of attitudes and requests that are likely to create conflict or negative responses

21. 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)

22. the importance of making a contribution to improving working practices and procedures, and the procedure and format for making suggestions for improvements

23. the benefits to you and to the organisation if improvements can be identified and implemented

24. the need to dispose of waste materials and consumables (such as oils and chemicals) in a safe and environmentally friendly way

25. 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

26. when to act on your own initiative and when to seek help and advice from others

27. the importance of leaving the work area in a safe condition on completion of your 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:

- 1.1 adhere to procedures or systems in place for risk assessment, COSHH, personal protective equipment (PPE) and other relevant safety regulations
- 1.2 wear the appropriate personal protective equipment for the work area and specific activity being carried out
- 1.3 use all tools and equipment safely and correctly, and only for their intended purpose
- 1.4 ensure that the work area is maintained and left in a safe and tidy condition

2.

Prepare for the specific engineering activity, by producing a work plan which includes **all** of the following:

- 2.1 documentation required (such as drawings, technical/reference documents - such as tapping drill sizes, imperial to metric conversion books, component specifications, quality documentation)
- 2.2 materials required (such as stock material, components, part-machined components, cables/wire, welding consumables)
- 2.3 equipment required (such as machine tools to be used, lifting and handling equipment, bending and forming equipment, anti-static equipment, test equipment)
- 2.4 workholding methods and equipment (such as machine or bench vice, clamps, special workholding arrangements), where appropriate
- 2.5 tools required (such as hand tools, portable power tools, cutting tools, soldering irons)
- 2.6 measuring equipment required (such as mechanical, electrical, pressure, flow, level, speed, sound)
- 2.7 the operating sequence to be followed
- 2.8 timescale required to complete the engineering operations

3.

Prepare to carry out the engineering activity, ensuring **all** of the following, as applicable to the work to be undertaken:

- 3.1 the work area is free from hazards and is suitably prepared for the activities to be undertaken
- 3.2 any required safety procedures are implemented
- 3.3 any necessary personal protection equipment is obtained, and is in a usable condition
- 3.4 all necessary drawings, specifications and associated documents are obtained
- 3.5 job instructions are obtained and understood
- 3.6 the correct materials or components are obtained

3.7 appropriate authorisation to carry out the work is obtained

4.

Complete the work activities, to include **all** of the following:

- 4.1 returning tools and equipment to the designated location
- 4.2 returning drawings and work instructions
- 4.3 disposing of waste materials, in line with organisational and environmental requirements
- 4.4 completing all necessary documentation accurately and legibly
- 4.5 identifying, where appropriate, any damaged or unusable tools or equipment

5.

Deal with problems affecting the engineering activity, to include **two** of the following:

- 5.1 materials
- 5.2 job specification
- 5.3 timescales
- 5.4 tools and equipment
- 5.5 quality
- 5.6 safety
- 5.7 drawings
- 5.8 people
- 5.9 work activities or procedures

6.

Create and maintain effective working relationships, to include carrying out **all** of the following:

- 6.1 turning up at your place of work on time and suitably dressed for the work activities to be carried out
- 6.2 following instructions given to you and checking out any uncertainties before you start work
- 6.3 seeking information and assistance in a courteous and polite manner
- 6.4 taking advice from others in a positive way
- 6.5 dealing with disagreements in an amicable and constructive way
- 6.6 communicating with others nearby to make sure that they know about actions you are taking which may affect their work
- 6.7 showing respect for the views, rights and property of others

7.

Contribute to developing your own engineering competence, to include **all** of the following:

- 7.1 describing the levels of skill, knowledge and understanding needed for competence in the areas of work expected of you
- 7.2 describing your development objectives/program, and how these were identified
- 7.3 providing information on your expectations and progress towards your identified objectives

7.4 using feedback and advice to improve your personal performance

8.

Contribute to organisational procedures for identifying opportunities for improvement to **one** of the following:

- 8.1 working practices
- 8.2 tools and equipment
- 8.3 training and development
- 8.4 working methods
- 8.5 internal communication
- 8.6 safety
- 8.7 quality
- 8.8 teamwork
- 8.9 other specific procedure

## 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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