

Overview

This standard identifies the competences you need to maintain Advanced Manufacturing Technology (AMT) in accordance with approved procedures.

The standard applies to those working in a range of technical disciplines including:

- Electrical
- Mechanical
- Mechatronics
- Automation

Technology includes the plant, equipment, accessories and components associated with an automated manufacturing method. You will be required to use appropriate work instructions and information to maintain the AMT.

The AMTs relevant to this standard are:

- Robotics
- Cobotics
- Machine Connectivity
- AR/VR
- Digital Twinning

Your responsibilities will require you to comply with organisational policy and procedures for the work activities associated with **maintaining AMT**, and to report any problems with the work, equipment or materials that you cannot personally resolve, or 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 produce.

You will understand the techniques used, and their application, in adequate depth to provide a sound basis for carrying out the activities to the required specification.

You will understand the safety precautions required when carrying out the activities

and when using the associated tools and equipment. 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. access and accurately interpret all relevant work instructions and information
2. work safely at all times and in accordance with all relevant legislation, guidelines, policies, procedures and protocols
3. produce a risk assessment and method statement for the work to be carried out
4. deal promptly and effectively with any problems within your control and report those which cannot be solved
5. access and gather the appropriate equipment, accessories and components to carry out the work activities
6. comply with industry practices and organisational procedures to ensure the co-ordination of site services and work activities
7. wear PPE in accordance with organisational procedures
8. complete safe-isolation and release of stored energy prior to commencing work activities
9. confirm the type of maintenance to be undertaken and the associated procedures
10. carry out the maintenance activities
11. ensure the safety of the equipment, accessories and components where the maintenance activities cannot be completed immediately
12. complete the specified maintenance activities in accordance with industry recognised methods and practices
13. identify those necessary variations to the planned programme of work that may have the potential to introduce a hazard and/or impact on the work activities to be undertaken
14. confirm with relevant others the corrective actions to ensure that any variations to the planned programme of work will have minimum impact on the work activities
15. complete and store all relevant documentation in accordance with organisational procedures
16. dispose of waste in accordance with organisational procedures
17. leave the work area in a safe condition on completion of the work activities in accordance with organisational procedures

Knowledge and understanding

You need to know and understand:

1. the current legislation, guidelines, policies, procedures and protocols which are relevant to your work practice and to which you must adhere
2. the scope and limitations of your own competence, responsibilities and accountability as it applies to your technical discipline and job role
3. how to access and interpret all relevant work instructions and information
4. how to produce a risk assessment and method statement for the work to be carried out
5. the hazards and risks which may arise during the execution of your work role and how you can minimise these
6. specific procedures for reporting issues which are beyond your competence, responsibilities and accountability
7. the duty to report any acts or omissions that could be unsafe/detrimental to you or relevant others
8. how to access and gather the appropriate equipment, accessories and components to carry out the work activities
9. how to select, put on and remove PPE
10. the correct use of equipment to protect the health and safety of you and relevant others
11. how to obtain the authority to enter the relevant work areas and any specific permit-to-work procedures that are used
12. the principles and practice of safe-isolation and release of stored energy prior to commencing the work activities
13. the types of maintenance to be undertaken and the associated procedures
14. the advantages and limitations of different types of maintenance
15. the range of maintenance activities
16. the methods and techniques associated with the maintenance activities
17. how to ensure the safety of the equipment, accessories and components where the maintenance activities cannot be completed immediately
18. the operation, applications, advantages and limitations of different AMT and associated systems
19. how to work with, and identify necessary variations to, work instructions and information

20. the corrective actions to ensure that any variations to the planned programme of work will have minimum impact on the work activities
21. the importance of communication, keeping relevant others informed during the work
22. organisational management structures, roles, and responsibilities
23. the procedures and methods relating to the coordination of inter-disciplinary and multi-disciplinary teams within and across disciplines
24. how to dispose of waste in accordance with organisational procedures
25. how to complete and safely store all relevant documentation in accordance with organisational procedures

Scope/range related to performance criteria

Advanced Manufacturing Technologies (AMT)

- The electrical, mechanical, electro-mechanical, mechatronics and electronic equipment associated with:
 - Robotics
 - Cobotics
 - Machine Connectivity
 - AR/VR
 - Digital Twinning

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Technical Discipline

- Electrical
- Mechanical
- Mechatronics
- Automation

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Work instructions and information

- Drawings
- Specifications
- Method statements
- Work schedules/programmes

Maintain Advanced Manufacturing Technology

- Manufacturer instructions
- Environmental requirements
- Sustainability requirements

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Work areas

- Clean room
- Non-clean room

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Stored energy

- Gravitational potential energy
- Pressurised gases and liquids
- Mechanical energy
- Electrical energy

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Equipment, accessories and components

- Hand tools
- Power tools
- Access equipment
- Safety equipment (including PPE)
- Materials
- Consumables

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Type of maintenance

- Planned
- Total preventative maintenance (TPM),
- Breakdown
- Scheduled
- Corrective
- Emergency
- Post fault
- Scheduled servicing
- Modification to equipment
- Condition-based maintenance

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Maintenance activities

- Visual examination
- Monitoring
- Repair
- Remove
- Replace
- Sensory testing
- Checking alignment
- Making routine adjustments

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- Removing excess dirt and grime
- Recording results and reporting defects

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Organisational procedures

- Accident reporting
- Communication
- Customer services
- Emergencies
- Implementing and monitoring health and safety requirements and issues
- Implementing and monitoring issues relating to the environment and sustainability
- Information management
- Project management
- Risk assessment

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Relevant others

- Client representatives
- Customers/clients
- Service providers
- Site/contract/production manager
- Supervisors
- Work colleagues

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Maintain Advanced Manufacturing Technology



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