

ECIMPSM13 - SQA Unit Code FP7E 04

Test the performance and condition of mechanical plant and equipment



Overview

This standard is about testing the performance and condition of engineering construction mechanical plant and equipment.

You will need to be able to set up and carry out tests and monitoring within agreed procedures, review the results and carry out further tests if necessary, whilst adhering to Health and safety legislation, regulations and safe working practices.

In the context of this standard, your responsibility is to interpret and work within given specifications, selecting techniques and making variations to achieve the best possible result. In some cases, you may still be expected to refer to others for final authorisation, even though you remain responsible for identifying and implementing decisions.

This standard is for

This standard is for mechanical maintenance technicians.

Performance criteria

- You must be able to:*
- P1 work safely at all times, complying with health and safety and other relevant legislation, regulations, guidelines and local rules or procedures
 - P2 ensure that the **work environment, assets**, material, equipment and tools are suitably prepared for the activities to be undertaken
 - P3 follow the relevant procedures for use of tools and equipment to carry out required tests
 - P4 set up and carry out tests using the correct procedures and within agreed timescales
 - P5 record the results in the appropriate format
 - P6 review the results and carry out further tests if necessary
 - P7 **reinstate the work area**
 - P8 deal promptly and effectively with problems within your control and report those that cannot be solved

Knowledge and understanding

You need to know and understand:

- K1 relevant legislative, regulatory and local requirements or procedures and safe working practices
- K2 preparation and reinstatement requirements in respect of the work area, material, and equipment, and the possible consequences of incorrect actions in these areas
- K3 engineering test specifications
- K4 calibration of **test equipment** and authorisation procedures
- K5 **testing** and analysis **methods and techniques**
- K6 environmental controls relating to testing
- K7 test reporting documentation and control procedures
- K8 your responsibilities for ensuring care and security of tools and equipment used
- K9 your responsibilities with regard to reporting lines and procedures in your working environment

Additional Information

Scope/range

Work environment

Typical work environments could include:

- 1 at height
- 2 confined spaces
- 3 controlled operational and offshore installations
- 4 designated work areas
- 5 engineering construction sites
- 6 existing plants and structures
- 7 fabrication workshops
- 8 nuclear sites
- 9 onshore and offshore installations
- 10 potential explosive atmospheres
- 11 shafts
- 12 shipyards
- 13 tunnels
- 14 working inside plant and systems
- 15 working on access structures (scaffold)

Assets

This term could include:

- 1 components of process systems
- 2 compressors
- 3 engines
- 4 heat exchangers
- 5 HVAC systems
- 6 pumps
- 7 pressure vessels
- 8 protection devices
- 9 rotating equipment and tools
- 10 transmission systems
- 11 turbines

Reinstate the work area

This term could include:

- 1 returning the work area to a safe condition
- 2 correctly disposing of waste materials
- 3 storage of re-usable materials, consumables and equipment in accordance with appropriate procedures
- 4 completion of all necessary documentation

Test equipment

Test equipment to be used could include:

- 1 gauge/recorders
- 2 any test equipment as required (must be within calibration)

Testing methods and techniques

The tests to be applied are clearly defined and are appropriate for the engineering product. Detailed procedures and specifications define the set up and conduct of the tests. The testing procedures to be followed are clearly defined and, although they may involve more than one stage, full details on when and how to proceed through the stages will be available. You could be expected to understand how to use the various diagnostic aids to help with fault analysis.

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