

COSVR668 – SQA Unit Code HM4C 04

Carry out specific tests on plant or machinery to determine operational serviceability



Overview

This standard is about

- 1 interpreting information
- 2 adopting safe and healthy working practices
- 3 selecting materials, components, consumables and equipment
- 4 carrying out specific tests on plant or machinery to determine operational serviceability

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Performance criteria

- You must be able to:*
- P1 interpret the given information relating to the work and resources to confirm its relevance
 - P2 comply with the given, relevant legislation and official guidance to carry out your work and maintain safe and healthy work practices
 - P3 select the required quantity and quality of resources for the methods of work
 - P4 comply with organisational procedures to minimise the risk of damage to the work and surrounding area
 - P5 comply with the given contract information to carry out the work efficiently to the required specification
 - P6 complete the work within the allocated time, in accordance with the programme of work

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Knowledge and understanding

You need to know and understand:

Performance Criteria 1

Interpretation of information

- K1 the organisational procedures developed to report and rectify inappropriate **information** and unsuitable **resources**, and how they are implemented
- K2 the types of **information**, their source and how they are interpreted
- K3 the organisational procedures to solve **problems** with the **information** and why it is important they are followed

Performance Criteria 2

Safe work practices

You need to know and understand:

- K4 the level of understanding operatives must have of **information** for relevant, current **legislation and official guidance** and how it is applied
- K5 how **emergencies** should be responded to and who should respond
- K6 the organisational **security procedures** for tools, equipment and personal belongings
- K7 what the accident reporting procedures are and who is responsible for making the report
- K8 why, when and how **health and safety control equipment** should be used

Performance Criteria 3

Selection of resources

You need to know and understand:

- K9 the characteristics, quality, uses, sustainability, limitations and defects associated with the **resources** and how defects should be rectified
- K10 how the **resources** should be used and how any **problems** associated with the **resources** are reported
- K11 the organisational procedures to select **resources**, why they have been developed and how they are used
- K12 the **hazards** associated with the **resources** and **methods of work** and how they are overcome

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Performance Criteria 4

Minimise the risk of damage

You need to know and understand:

- K13 how to **protect work** from damage and the purpose of protection
- K14 why **disposal of waste** should be carried out safely and how it is achieved

Performance Criteria 5

Meet the contract specification

You need to know and understand:

- K15 how **methods of work**, to meet the specification, are carried out and **problems** reported
- K16 how **maintenance** of tools and equipment is carried out

Performance Criteria 6

Allocated time

You need to know and understand:

- K17 what the **programme** is for the work to be carried out in the estimated, allocated time and why deadlines should be kept

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Additional Information

Scope/range related to performance criteria

Performance Criteria 1

- 1 interpretation of drawings, specifications, schedules, method statements, risk assessments, workshop manuals, technical service bulletins, parts manuals and manufacturers' information related to the work to be carried out

Performance Criteria 2

- 2 avoidance of risk by complying with the given information relating to at least five of the following
 - 2.1 methods of work
 - 2.2 safe use of health and safety control equipment
 - 2.3 safe use of access equipment
 - 2.4 safe use, storage and handling of materials
 - 2.5 safe use and storage of, tools and equipment
 - 2.6 specific risks to health

Performance Criteria 3

- 3 selection of resources associated with own work
 - 3.1 materials, components and fixings / fittings
 - 3.2 tools and equipment
 - 3.3 consumables

Performance Criteria 4

- 4 protection of the work and its surrounding area from damage
- 5 minimise damage and maintain a clean work space
- 6 disposal of waste in accordance with current legislation

Performance Criteria 5

- 7 demonstration of work skills to measure, test and compare
- 8 use and maintain hand tools, portable power tools, specialist test equipment and ancillary equipment
- 9 complete specific tests to given working instructions on at least four of the following
 - 9.1 electric systems
 - 9.2 cooling systems
 - 9.3 lubrication systems
 - 9.4 emission control
 - 9.5 hydraulic systems
 - 9.6 hydrostatic drive

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- 9.7 transmission systems
 - 9.8 pneumatic systems
 - 9.9 braking systems
 - 9.10 vibration management
 - 9.11 steering/suspension systems
 - 9.12 generator output control
 - 9.13 electronic management
 - 9.14 powered access equipment
 - 9.15 material handling equipment
 - 9.16 water pumps
 - 9.17 craneage
 - 9.18 lifting equipment
 - 9.19 load testing (cranes, hoists, MEWPs, MHE)
 - 10 complete tests to given working instructions for the following
 - 10.1 statutory requirement
 - 10.2 compliance with policy and procedures
 - 10.3 operational efficiency (speeds, flow rates, consumption, emissions, outputs)
 - 10.4 complete functional, operational and safety checks
 - 11 complete and maintain records
- Performance Criteria 6**
- 12 completion of own work within the estimated, allocated time to meet the needs of other occupations and/or client

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Scope/range related to knowledge and understanding

Disposal of waste

- 1 environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance

Emergencies

- 2 operative's response to situations in accordance with organisational authorisation and personal skills when involved with
 - 2.1 fires, spillages, injuries
 - 2.2 emergencies relating to occupational activities

Hazards

- 3 those identified by risk assessment, method of work, manufacturers' technical information, statutory regulations and official guidance

Health and safety control equipment

- 4 identified by the principles of protection for occupational use, types and purpose of each type, work situations and general work environment
 - 4.1 collective protective measures
 - 4.2 personal protective equipment (PPE)
 - 4.3 respiratory protective equipment (RPE)
 - 4.4 local exhaust ventilation (LEV)

Information

- 5 drawings, specifications, schedules, method statements, risk assessments, workshop manuals, technical service bulletins, parts manuals, manufacturers' information and current regulations associated with the specific testing of plant or machinery

Legislation and official guidance

- 6 this relates to the operative's responsibilities regarding potential accidents and health hazards whilst working in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting

Maintenance

- 7 operative care of hand tools and portable power tools, specialist test equipment and ancillary equipment

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Methods of work

- 8 application of knowledge for safe and healthy work practices, procedures and skills relating to the method/area of work and materials used to:
 - 8.1 isolate plant, machinery and components
 - 8.2 confirm calibration of test equipment
 - 8.3 test electric systems, cooling systems, lubrication systems, hydraulic systems, hydrostatic drive, transmission systems, pneumatic systems, braking systems, vibration management, steering/suspension systems, generator output control, electronic management, powered access equipment, material handling equipment, water pumps, craneage, lifting equipment and load testing (cranes, hoists, MEWPs MHE)
 - 8.4 conduct tests for statutory requirements, compliance with policy and procedures and operational efficiency (speeds, flow rates, consumption, emissions, output)
 - 8.5 collect measurements, readings, input and output data, working cycle times and tolerances
 - 8.6 identify and assess the relevance of inconsistent data
 - 8.7 make allowances for situation, environment, atmospheric conditions
 - 8.8 operate pressure gauge, flow gauge, multi-meter, portable appliance testing equipment, computer aided diagnostic software, test lamp, compression measurement equipment and timing devices
 - 8.9 analyse information collected; make comparisons with other plant and machinery, consider previous knowledge, apply sensory abilities (visual, audible, touch and smell) consult manufacturers' information and results of other tests
 - 8.10 compare and confirm test outcome with given specifications
 - 8.11 report findings
 - 8.12 use hand tools, portable power tools and equipment
 - 8.13 work at height
 - 8.14 use access equipment
 - 8.15 complete and maintain records
- 9 team work and communication
- 10 needs of other occupations associated with conducting specific tests on

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Problems

11 those arising from information, resources and methods of work

11.1 own authority to rectify

11.2 organisational reporting procedures

Programme

12 types of progress charts, timetables and estimated times

13 organisational procedures for reporting circumstances which will affect the work programme

Protect work

14 protect work against damage from general workplace activities, other occupations and adverse weather conditions

Resources

15 materials, components and equipment relating to types, quantity, quality, sizes and the sustainability of standard and/or specialist:

15.1 consumables

15.2 fixings and fittings

15.3 hand tools, portable power tools, specialist test equipment and ancillary equipment

16 methods of calculating quantity, length, volume, area and wastage associated with the method/procedure to conduct specific tests on plant or machinery to determine operational serviceability

Security procedures

17 site, workplace, company and operative

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