

**-SQA- SCOTTISH QUALIFICATIONS AUTHORITY**

**NATIONAL CERTIFICATE MODULE: UNIT SPECIFICATION**

**GENERAL INFORMATION**

**-Module Number-**            2211153                                      **-Session-1993-94**  
**-Superclass-**                **WD**  
**-Title-**                        **INSPECTING PLANT AND EQUIPMENT TO IDENTIFY DEFECTS**

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**-DESCRIPTION-**

**GENERAL COMPETENCE FOR UNIT:** Interpreting and giving instructions for planning, organising and adopting safe working practices in carrying out inspection procedures on plant and equipment and their components and systems against physical and performance specification and the recording and maintaining of information from inspection findings.

**OUTCOMES**    (Elements of Competence)

1.      interpret technical information for inspecting plant and equipment;
2.      select tools and equipment;
3.      identify defects against physical and performance specification;
4.      record and maintain information from inspection findings.

This unit incorporates the standards of the CITB Lead Body.

**CREDIT VALUE:** 1 NC Credit

**ACCESS STATEMENT:** This module forms part of the level III SVQ in Plant Maintenance, details of which are given in the Support Notes, under Progression. There is no access statement for this module but it is designed to complement the other units in the SVQ and candidates would normally be expected to be receiving complementary industrial experience in a related field.

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**NATIONAL CERTIFICATE MODULE: UNIT SPECIFICATION****STATEMENT OF STANDARDS****UNIT NUMBER:** 2211153**UNIT TITLE:** INSPECTING PLANT AND EQUIPMENT TO IDENTIFY DEFECTS

Acceptable performance in this unit will be the satisfactory achievement of the standards set out in this part of the specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

**OUTCOME (ELEMENT OF COMPETENCE)**

1. INTERPRET TECHNICAL INFORMATION FOR INSPECTING PLANT AND EQUIPMENT

**PERFORMANCE CRITERIA**

- (a) Technical information derived from given sources relates to relevant task.
- (b) Corrective actions are implemented against deviations from technical information.
- (c) Co-ordinating directions are clear, concise and effective.

**RANGE STATEMENT**

Information sources: technical service bulletins; statutory regulations; oral or written instructions; manufacturers' technical information; company instructions and records; drawings; symbols; diagrams; codes of practice.

Corrective actions: specification and record amendment procedures.

Calculations: multiplication; division; addition; subtraction.

Location: site; depot.

**EVIDENCE REQUIREMENTS**

Performance evidence of competence under working conditions in:

- (i) extracting information sources in the range;
- (ii) interpreting information and instructions from the line manager or supervisor;
- (iii) calculating linear measurements, quantities and volumes from given information sources.

Oral or written evidence of knowledge and understanding of:

- (i) types and purposes of information sources;
- (ii) methods of checking and reporting inaccuracies in information sources;
- (iii) reasons and purpose of statutory and non-statutory periodic inspections of plant and equipment;
- (iv) reasons for records and amendment procedures.

All the performance criteria must be met and all items in the range statement covered.

**OUTCOME (ELEMENT OF COMPETENCE)****2. SELECT TOOLS AND EQUIPMENT****PERFORMANCE CRITERIA**

- (a) Oral or written instructions and information given to the candidate are correctly interpreted and implemented.
- (b) Quality of tools and equipment selected complies with the specification.
- (c) Tools and equipment provided are those required to complete the task to the specification.
- (d) Corrective actions are implemented to establish utility of tools and equipment.

**RANGE STATEMENT**

Information sources: manufacturers' technical information; workshop manuals; oral or written instructions; technical service bulletins; company regulations; statutory regulations.

Tools and equipment: hand tools; specialist servicing tools; inspection lamps; gauges; diagnostic tools; test equipment.

Corrective actions: defects; replacement procedures.

Locations: site; workshop.

**EVIDENCE REQUIREMENTS**

Performance evidence of competence under working conditions in selecting tools and equipment.

Oral or written evidence of knowledge and understanding of:

- (i) types and purpose of information sources;
- (ii) characteristics, uses and limitations of tools and equipment;
- (iii) use of diagnostic tools and equipment to aid inspection.

All the performance criteria must be met and all items in the range statement covered.

**OUTCOME (ELEMENT OF COMPETENCE)**

- 3. IDENTIFY DEFECTS AGAINST PHYSICAL AND PERFORMANCE SPECIFICATION**

**PERFORMANCE CRITERIA**

- (a) Oral or written instructions and information given to the candidate are correctly interpreted and implemented.
- (b) Provision of type and quantity of tools and equipment meets inspection requirements.
- (c) Plant and equipment is operated in accordance with industry procedures.
- (d) Defects and faults at variance to manufacturers' or statutory requirements or specifications are identified and recorded.
- (e) The cleanliness of the work area is maintained.
- (f) Work is completed to agreed time schedules.

**RANGE STATEMENT**

Information sources: manufacturers' technical information; statutory regulations; company regulations; oral or written instructions.

Tools and equipment: hand tools; specialist servicing tools; test equipment; inspection lights; diagnostic tools.

Plant and equipment: static plant; wheeled plant; tracked plant; small plant; attachments.

Processes: inspecting; identifying; locating; examining; assessing; testing; operating; recording.

Defects: mechanical; electrical.

Safety: personal protective equipment; plant and equipment operating instructions; regulations on inspecting, examining and testing plant and equipment; HASWA (Health and Safety at Work Act); COSHH (Control of Substances Hazardous to Health) Regulations.

**EVIDENCE REQUIREMENTS**

Performance evidence of competence under working conditions in:

- (i) inspecting plant and equipment to manufacturers' and statutory specifications;
- (ii) starting, stopping and manoeuvring plant and equipment;
- (iii) functional testing of plant and equipment;
- (iv) identifying and locating defects and malfunctions in plant and equipment;
- (v) reporting faults and defects;
- (vi) leaving plant and equipment secure when not in use.

Oral or written evidence of knowledge and understanding of:

- (i) types and purposes of information sources;
- (ii) usage of sensory perceptions;
- (iii) systematic methods and procedures for inspecting plant and equipment;
- (iv) selection and location of appropriate testing and inspecting equipment;
- (v) methods of evaluation of results from inspection tests and procedures;
- (vi) criteria for classification of defects as serviceable or unserviceable;
- (vii) safety requirements for the correct functioning of plant and equipment;
- (viii) procedures for reporting malfunctions and defects in plant and equipment;
- (ix) methods of securing and isolating plant and equipment;
- (x) responsibilities with regard to statutory regulations.

All the performance criteria must be met and all items in the range statement covered.

**OUTCOME** (ELEMENT OF COMPETENCE)

**4. RECORD AND MAINTAIN INFORMATION FROM INSPECTION FINDINGS**

**PERFORMANCE CRITERIA**

- (a) Records are complete, accurate, clear and accessible.
- (b) Co-ordinating directions and communications are clear, concise and effective.
- (c) Conclusions and recommendations are clearly and accurately stated.
- (d) Working methods are designed to ensure that organisational objectives are achieved.
- (e) Work methods and activities satisfy current legislation.

**RANGE STATEMENT**

Information sources: company record requirements; manufacturers' technical information; statutory requirements; company instructions.

Documentation: company or organisation records; statutory forms.

Location: site; depot.

Safety: statutory administration procedures for the commissioning of plant and equipment; codes of practice; HASWA (Health and Safety at Work Act); COSHH (Control of Substances Hazardous to Health) Regulations.

**EVIDENCE REQUIREMENTS**

Performance evidence of competence under working conditions in:

- (i) recording and collating information;
- (ii) processing information;
- (iii) report writing.

Oral or written evidence of knowledge and understanding of:

- (i) types and purpose of information sources;
- (ii) methods and procedures for report writing and report compilation;
- (iii) format of reports on technical matters;
- (iv) non-statutory inspection administrative procedures;
- (v) statutory inspection administrative procedures;
- (vi) purpose of planning and control procedures;
- (vii) responsibilities with regard to statutory regulations.

All the performance criteria must be met and all items in the range statement covered.

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**ASSESSMENT RECORDS**

In order to achieve this unit, candidates are required to present sufficient evidence that they have met all the performance criteria for each outcome within the range specified. Details of these requirements are given for each outcome. The assessment instruments used should follow the general guidance offered by the SQA assessment model and an integrative approach to assessment is encouraged. (See references at the end of support notes).

Accurate records should be made of assessment instruments used showing how evidence is generated for each outcome and giving marking schemes and/or checklists, etc. Records of candidates' achievements should be kept. These records will be available for external verification.

**SPECIAL NEEDS**

In certain cases, modified outcomes and range statements can be proposed for certification. See references at end of Support Notes.

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**NATIONAL CERTIFICATE MODULE: UNIT SPECIFICATION****SUPPORT NOTES**

<b>UNIT NUMBER</b>	2211153
<b>UNIT TITLE</b>	INSPECTING PLANT AND EQUIPMENT TO IDENTIFY DEFECTS

**SUPPORT NOTES:** This part of the unit specification is offered as guidance. None of the sections of the support notes is mandatory.

**NOTIONAL DESIGN LENGTH:** SQA allocates a notional design length to a unit on the basis of time estimated for achievement of the stated standards by a candidate whose starting point is as described in the access statement. The notional design length for this unit is 40 hours. The use of notional design length for programme design and timetabling is advisory only.

**PURPOSE** This unit is designed to enable the candidate to acquire skills and knowledge related to inspecting plant and equipment to identify defects. It is suitable for operatives working in the construction industry or a service industry related to construction.

SQA publishes summaries of NC units for easy reference, publicity purposes, centre handbooks, etc. The summary statement for this unit is as follows:

This module will help you to acquire the skills and knowledge necessary to interpret technical information, select tools and equipment, carry out inspection procedures on plant and equipment and record information from inspection findings.

**CONTENT/CONTEXT** The candidate successfully completing this module will require underpinning knowledge and skills relating to planning and organising inspections of plant and equipment and the methods used to identify defects and in record keeping and retrieval of information.

The unit would be offered to candidates from the construction and related services industries. The skills are transferable within different working environments but the unit is primarily aimed at candidates whose normal place of work would be a site or similar environment.

The range statement is applicable to all areas of construction and other related or similarly structured industries. The competences and underpinning knowledge gained in successfully completing this unit would be transferable across a range of disciplines within the built environment.

The unit deals with inspecting plant and equipment and is complemented by units dealing with related aspects of work in plant maintenance.

It should be delivered as part of a structured programme of training and orientated to the context of the candidate's work and area of responsibility.

**APPROACHES TO GENERATING EVIDENCE** The achievement of the underpinning knowledge required for this unit would be assisted by the use of slides and videos, and hands-on experience.

Tutors/trainers should demonstrate practical elements step by step until the candidate feels confident enough to attempt them on his/her own, and the safety factors should be thoroughly emphasised.

Supervisors and employers could also play an important part in assisting candidates to generate evidence.

**ASSESSMENT PROCEDURES** Candidates will be able to provide evidence of performance using a variety of methods. These will include:

- Performance at work (recorded in Candidate's Assessment and Evidence Record or other methods).
- Performance in training (recorded in Candidate's Assessment and Evidence Record or other methods).
- Simulated exercises (skills/progress test results).
- Past achievement/experiences e.g. letters of endorsement; past certificates.

Evidence gathering from the workplace will be the preferred method; however there may be situations where this is inappropriate or the evidence is insufficient. Supplementary evidence will also be required to demonstrate the underpinning knowledge related to the competences in the unit.

For detailed guidance on assessment, reference should be made to the publications listed at the end of the Support Notes and to the Assessment Guidance Notes available for the delivery of the Scottish Vocational Qualification of which this module is a component.

**PROGRESSION** This unit forms part of the level III SVQ in Plant Maintenance.

Each module is a separate unit and the modules are not necessarily taken in a prescribed order, although there is a logical sequence to the acquisition of the skills and knowledge concerned.

To gain the award, the candidate must successfully complete all of the following units:

Construction: Plant Maintenance (level III)

2211143	Servicing Plant and Equipment
2211153	Inspecting Plant and Equipment to Identify Defects
2211163	Repairing and Overhauling Plant and Equipment

2211173	Commissioning Plant and Equipment
4120723	Contributing to the Planning, Organisation, Monitoring, Control and Evaluation of Operational Activities
4120733	Maintaining Working Conditions and Operational Activities to Meet Quality Standards (x 0.5)

**RECOGNITION** Many SQA NC units are recognised for entry/recruitment purposes. For up-to-date information see the SQA guide 'Recognised and Recommended Groupings'.

## REFERENCES

1. Guidelines for Module Writers.
2. SQA's National Standards for Assessment and Verification.
3. For a fuller discussion on assessment issues, please refer to SQA's Guide to Assessment.
4. Procedures for special needs statements are set out in SQA's guide 'Students with Special Needs'.

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