



Senta

**SVQ Performing Engineering Operations
at SCQF Level 4 and 5
Assessment Strategy**

SVQ PEO ASSESSMENT STRATEGY
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Introduction

[SEMTA], the Standards Setting Body for the Science Engineering Manufacturing Technologies sector, has taken into account the Scottish Qualifications Authority (SQA) Accreditation Regulatory Requirements in producing this Assessment Strategy

[SEMTA] has produced this guidance to:

- assist assessors, internal verifiers and external verifiers
- encourage and promote consistent assessment of this qualification and/or units.
- promote cost effective assessment plans

This guidance provides definitions for:

- the qualifications and experience required for Assessors and Verifiers
- the assessment environment and notes on simulation / replication
- access to this qualification/units

and suggestions for:

- carrying out assessments
- performance evidence requirements
- assessing knowledge and understanding
- the arrangements for 'external quality control of assessment'

The importance which employers and learners place on having this qualification will provide a key measure of [SEMTA's] success with this assessment strategy. Another key success factor will be [SEMTA's] partnership with the relevant Awarding Bodies.

[SEMTA] will use the following guidance to continually improve its strategies for assessment for part or whole qualifications.

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Scope of the Qualification

Evidence of competence must be assessed against the requirements of the relevant National Occupational Standards.

The SVQs in PEO at SCQF Level 4 and Level 5 have been designed to cover those learners who are either:

- acquiring engineering competencies in a realistic, sheltered and controlled environment such as schools, colleges, training providers, company training centres, HM Prison Services and the MOD training workshops to enable a safe progression into the workplace/employment
- employed but require additional engineering competencies as part of an existing job role or to enable career progression

Qualification Structure

Learners are required to complete mandatory units within their chosen pathway, followed by a number of optional units from a provided selection. The range of optional units allows for any variations in the occupation in different organisations and across the sector.

The number of mandatory and optional units required to achieve this qualification, and the available pathways, is defined in the specific qualification structure. This outlines the minimum number of units that must be taken, but additional units can be taken to suit the requirements of particular organisations.

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Assessor Requirements

Assessment must be carried out by competent assessors who must hold or be working towards an appropriate Assessor qualification as identified by SQA Accreditation, the qualification regulator. Assessors holding older assessor qualifications must be able to demonstrate that they are assessing to the current standards as appropriate to the assessment being carried out.

Specific technical requirements for Assessors

Assessors must be able to demonstrate that they have verifiable, relevant and sufficient technical competence to evaluate and judge evidence for this qualification. This will be demonstrated either by holding a relevant technical qualification or by proven industrial experience of the technical areas to be assessed. The assessor's competence must, at the very least, be at the same level as that required of the learner(s) in the units being assessed.

Assessors must also know:

- the content and meaning of the National Occupational Standards against which assessments are to be carried out
- SQA Accreditation's regulatory requirements
- the relevant Awarding Body's documentation and system of vocational qualifications within which the assessment is taking place.

Verifier Requirements

Internal Verifiers must hold, or be working towards an appropriate Internal Verifier qualification as identified by SQA Accreditation, the qualification regulator. Internal Verifiers holding older qualifications must be able to demonstrate that they are verifying to the current standards.

External Verifiers must hold, or be working towards, an appropriate External Verifier qualification as identified by SQA Accreditation, the qualification regulator. External Verifiers holding older qualifications must be able to demonstrate that they are verifying to the current standards.

Both Internal and External Verifiers will also be expected to be fully conversant with:

- the terminology in the National Occupational Standards against which the assessments and verification are to be carried out
- SQA Accreditation's regulatory requirements
- the relevant Awarding Body's documentation and system of vocational qualifications within which the assessment and verification is taking place

Specific technical requirements for Internal and External verifiers

Internal and External Verifiers of this qualification and/or units must be able to demonstrate that they have verifiable, sufficient and relevant industrial experience, and must have a working knowledge of the processes, techniques and procedures that are used in the engineering industry.

The tables on the following page show the recommended levels of technical competence for Assessors, Internal Verifiers, and External verifiers.

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Technical Requirements for Assessors and Verifiers

Position	Prime activity requirements	Support activity requirements	Technical requirements (see notes)
Assessor	Assessment Skills	IV Systems	Technical <i>competence</i> in the areas covered by the qualifications being assessed
Internal Verifier	Verification Skills	Assessment Knowledge	Technical <i>understanding</i> of the areas covered by the qualifications
External Verifier	Verification skills	Assessment Understanding	Technical <i>awareness</i> of the areas covered by the qualifications

Notes

1. Technical *competence* is defined here as a combination of practical skills, knowledge, and the ability to apply both of these, in familiar and new situations, within a real working environment.
2. Technical *understanding* is defined here as having a good understanding of the technical activities being assessed, together with knowledge of relevant Health & Safety implications and requirements of the assessments.
3. Technical *awareness* is defined here as a general overview of the subject area, sufficient to ensure that assessment and portfolio evidence are reliable, and that relevant Health and Safety requirements have been complied with.
4. The competence required by the assessor, internal verifier and external verifier, in the occupational area being assessed, is likely to exist at three levels as indicated by the shaded zones in the following table.

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Technical Competence required by:	An ability to <i>discuss</i> the general principles of the competences being assessed	An ability to <i>describe</i> the practical aspects of the competence being assessed	An ability to <i>demonstrate</i> the practical competences being assessed
Assessor			
Internal Verifier			
External Verifier			

Assessment Environment

The SVQs in PEO at SCQF Level 4 and 5 are intended to have a wide application throughout the engineering sector. It is necessary therefore to have a flexible approach to the environment in which their units are delivered and assessed.

There will be learners who have been working in an industry for some time and wish to acquire a broad range of basic competencies as part of an existing job role or to enable career progression. The PEO SVQ units will satisfy that need. Where this is the case assessment should take place within the learner's normal workplace/environment.

However, there is much to be gained by acquiring the basic engineering competencies whilst working in a sheltered environment. This is due to an ongoing emphasis on safety critical work activities and the need to ensure flexibility of assessment opportunities to both maintain and enhance the provision of competent personnel within the industry. This assessment method will allow a minimum safe level of skills, knowledge and understanding to be achieved and demonstrated by the learner prior to being exposed to the hazards of the industrial environment, thus minimizing the risk of injury to themselves and other employees.

It is recognised that not all learners who wish to achieve PEO SVQ units would require this form of assessment. Only those who are judged to be potentially at risk would need to provide evidence of a minimum level of skills, knowledge and understanding to enter the industrial environment.

Examples of this are:

- Where the hazardous nature of the engineering occupations mean that the learner requires close supervision whilst they provide evidence of competence involving safety critical activities.
- For reasons of age, people entering an industrial training environment are gradually introduced to the "world of work", this helps them mature and grow in confidence as well as providing evidence of their engineering competence.
- Learners with special assessment requirements benefit from the close supervision offered by this type of environment whilst providing evidence of competence.
- Adult learners new to the industry or to a specific skill area can provide evidence without fear of making mistakes which could prove to be dangerous and/or expensive.
- Where equipment to be used or worked on by approved, licensed or competent people (such as the aircraft industry) learners can only provide the necessary evidence that they have achieved a level of skills, knowledge and understanding in-order that they may prepare themselves for future employment.

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- Penal institutions where learners wish to provide evidence of a vocational achievement in-order that they may prepare themselves for future employment.

For the above reasons the assessment of a learner's competence in a sheltered environment is acceptable for this qualification, where the environment replicates that expected in industry. Where applicable, the machinery, tools, materials, equipment and resources used must be representative of industry standards and there must be sufficient equipment/resources available for each learner to demonstrate their competence individually, (**see note below**). Workpieces or work outcomes assessed must be the learner's own work and should be actual work examples that combine the skills, techniques required by the SVQ units so that achievement will properly reflect the learner's competence as specified in the unit.

Assessors must therefore ensure that the competency is fully transferable to the workplace. Other aspects that should be considered could include:

- environmental conditions such as lighting conditions, noise levels and the presence of hazards
- pressure of work such as time constraints and repetitive activities
- producing actual workpieces or work outcomes and the consequence of making mistakes and the effect this has on customer, supplier and departmental relationships

Note:

Group B units in the SVQ in Performing Engineering Operations at SCQF level 5 are skill specific work based learning units. Assessment of these units in a sheltered environment is NOT acceptable for this qualification and assessment must take place in the learner's place of work

Simulation/Replication

Where simulation/replication is required assessors must obtain agreement with internal and external verifiers before assessing learners.

Access to Assessment

There are no entry qualifications or age limits required for these qualifications and /or units unless this is a legal requirement of the process or the environment. Assessment is open to any learner who has the potential to reach the standards laid down for this qualification and/or units.

Aids or appliances may be used during assessment, providing they do not compromise the standard required.

Carrying Out Assessments

[SEMTA] strongly recommends that the majority of assessment evidence for the mandatory units is gathered during the performance of the optional units. Evidence should be obtained as a whole, where practically possible, since competent performance in the optional units is often dependent on competence in the mandatory units. Although it is possible to achieve this qualification with the minimum number of optional units, organisations may wish their learners to be assessed for more than this.

The National Occupational Standards were developed to cover a range of activities. The evidence produced for this qualification and/or units will, therefore, depend on the learner's choice of 'scope/range' items in the standard, which are intended to help the learner to seek the appropriate information and to acquire the necessary skills, techniques and knowledge before being able to demonstrate competent performance.

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Where the scope/range section gives a choice (for example 'any three from five'), assessors should note that learners do not need to cover the other (in this example, two) items, particularly where these additional items may relate to other activities or methods that are not part of the learner's normal workplace activity or area of expertise.

Assessing Knowledge and Understanding

Knowledge and understanding are key components of competent performance, but it is unlikely that performance evidence alone will provide enough evidence in this area. Where the learner's knowledge and understanding (and the handling of contingency situations) is not apparent from performance evidence, it must be assessed by other means and be supported by suitable evidence.

Knowledge and understanding can be demonstrated in a number of different ways, but it is suggested that the most appropriate methods for this qualification are oral questioning and practical demonstrations. Assessors should ask enough questions to be able to determine that the learner has an appropriate level of knowledge and understanding as required by the unit.

Evidence of knowledge and understanding will **not** be required for those scope/range items that have not been selected by the learner.

The achievement of the specific knowledge and understanding requirements of the standards cannot simply be inferred by the results of tests or assignments from other qualifications or training programmes. Where evidence is submitted from these sources, the assessor must, as with any assessment, make sure the evidence is valid, reliable, authentic, directly attributable to the learner, and meets the full knowledge and understanding requirements of the standard.

Where oral questioning is used the assessor must retain a record of the questions asked, together with the learner's answers.

Awarding Bodies may choose other methods, which must be supported by a suitable rationale.

Expert Witness Testimony

Where 'observation of process' is used to obtain the performance evidence, this must be carried out against the National Occupational Standards. Best practice would require that such observation is carried out by a qualified Assessor. If this is not practicable, then alternative sources of evidence may be used.

For example, the observation may be carried out against the standards by someone else in close contact with the learner. This could be a team leader, supervisor, mentor or line manager who may be regarded as a suitable witness to the learner's competency. However, the witness must be technically competent in the process or skills that they are providing testimony for, to at least the same level of expertise as that required of the learner. It will be the responsibility of the assessor to make sure that any witness testimonies accepted as evidence of a learner's competency are reliable and technically valid.

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SEMTA External Quality Control of Assessment

General

There are two major points where an Awarding Body interacts with the Centre in relation to the External Quality Control of Assessment for a qualification and these are:

- Approval - when a Centre take on new qualifications, the Awarding Body, normally through an External Verifier (EV) ensures that the Centre is suitably equipped and prepared to deliver the new qualification
- Monitoring - throughout the ongoing delivery of the qualification the Awarding Body, through EV monitoring and other mechanisms must maintain the quality and consistency of assessment of the qualification

Approval

In granting Approval, the Awarding Body, normally through its External Verifiers (EV) must ensure that the prospective Centre:

- Meets the requirements of SQA Accreditation
- Has sufficient and appropriate physical and staff resources
- Meets relevant health and safety and/or equality and access requirements
- Has a robust plan for the delivery of the qualification

Depending on an assessment of the condition of the Centre by the Awarding Body this may require a visit to the Centre to view evidence or may be undertaken through other means. The Awarding Body must have a clear rationale for the method(s) deployed

Monitoring

The Awarding Body, through EV monitoring and other mechanisms must ensure:

- that a strategy is developed and deployed for the ongoing Awarding Body monitoring of the Centre. This strategy must be based on an active risk assessment of the Centre. In particular the strategy must identify the learner, assessor and IV sampling strategy to be deployed and the rationale behind this
- that the Centre's internal quality assurance processes are effective in learner assessment
- that sanctions are applied to a Centre where necessary and that corrective actions are taken by the Centre and monitored by the Awarding Body/EV
- that reviews of Awarding Body external auditing arrangements are undertaken

Awarding Bodies are required to provide to SEMTA, on request, details of the strategies, rationales and reviews detailed above.

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ANNEX 1

Assessment Guidance

Performance Evidence Requirements

Performance evidence must be the main form of evidence gathered.

In order to demonstrate consistent, competent performance for a unit, a minimum of **three** different examples of performance must be provided, and must be sufficient to show that the performance requirements of the unit have been carried out to the prescribed standards. The minimum number of items specified in each of the scope/range statements for a unit (e.g., four from a choice of six) must **all** be covered, and appropriate evidence provided. It is possible that some of the scope/range items may be covered more than once. If, however, the three examples of performance evidence are not sufficient to cover all the specified scope/range items, then further examples of performance evidence will be required to ensure this coverage is achieved.

The most effective way of assessing competence, especially for the performance statements in relation to scope/range items, is through direct observation of the learner. Assessors must make sure that the evidence provided reflects the learner's competence and not just the achievement of a training programme.

Evidence that has been produced from team activities (e.g., maintenance and installation) is only valid when it clearly relates to a learner's specific and **individual** contribution to the activity, and not to the general outcome(s).

Items of performance evidence often contain features that apply to more than one unit, and can be used as evidence in any unit where appropriate.

Performance evidence must be a combination of:

- products of the learner's work, such as items that have been produced or worked on, and documents produced as part of a work activity

together with:

- evidence of the way the learner carried out the activities such as expert witness testimonies, assessor observations or authenticated learner reports, records or photographs of the work/activity carried out, etc.

Competent performance is more than just carrying out a series of individual set tasks. Many of the units contain statements that require the learner to provide evidence that proves they are capable of combining the various features and techniques. Where this is the case, separate fragments of evidence would not provide this combination of features and techniques and will not, therefore, be acceptable as demonstrating competent performance.

If there is any doubt as to what constitutes suitable evidence, the external verifier should be consulted.