



# Assessor's guidelines for the SVQ 3 in Plumbing at SCQF level 6

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# About this guide

This guide provides some practical examples of how to assess your candidates for the **SVQ 3 in Plumbing at SCQF level 6**. You may be able to think of other ways of assessing your candidates and recording your decisions about their competence.

Using assessments based on these examples does not guarantee successful verification — it is still your responsibility to ensure that internal quality assurance procedures are followed.

# Introduction

This introduction provides a brief overview of SVQs and how they are assessed in the workplace. If you are already familiar with the concept of SVQs, you may wish to go to the next section.

## About SVQs and the SCQF

Scottish Vocational Qualifications (SVQs) are work-based qualifications which set the level of occupational competence for each sector of the economy and are usually delivered in the workplace or in partnership with a college or other training provider. The qualifications have been designed by standards-setting bodies made up of experienced practitioners who represent employers, professional bodies, trade unions, education and voluntary organisations.

Each standards-setting body is responsible for developing national standards which define *what* employees (or potential employees) must be able to do, *how well*, and *in what circumstances*, to show that they are competent in their work.

Each SVQ which a standards-setting body develops has to fit into a broad framework which allows qualifications in the UK and throughout Europe to be compared.

There are SVQs for nearly all occupations in Scotland and they are available at SVQ levels 1–5. SVQs are currently notionally placed in the SCQF as the individual SVQs may be at differing SCQF levels and have differing amount of credit points, depending on the structure and context of the SVQ. SVQs are a means of recognising the skills and knowledge people need in employment, ie job competence. Successful completion of an SVQ provides clear evidence that the learner works to nationally recognised occupational standards.

Each Unit defines one aspect of a job or work-role, and says what it is to be competent in that aspect of the job. To be awarded a full SVQ, learners must achieve each of the SVQ Units which make it up by demonstrating that they are competent in that aspect of the job. The Units which make up the SVQ can also be taken as freestanding awards. Some SVQs or SVQ Units are incorporated into other awards or programmes including HNCs and Modern Apprenticeships.

## Explanation of levels

<b>SVQ 1 (SCQF level 4)</b>	Competence involves the application of knowledge and skills in the performance of a range of varied work activities, most of which may be routine or predictable.
<b>SVQ 2 (SCQF level 5)</b>	Competence involves the application of knowledge and skills in a significant range of varied work activities, performed in a variety of contexts. At this level, there will be activities, which are complex or non-routine and there is some individual responsibility and autonomy. Collaboration with others, perhaps through membership of a work group or team, may often be a requirement.
<b>SVQ 3 (either SCQF level 6 or 7)</b>	Competence involves the application of knowledge and skills in a broad range of varied work activities, most of which are complex and non-routine. There is considerable responsibility and autonomy, and control or guidance of others is often present.
<b>SVQ 4 (either SCQF level 8 or 9)</b>	Competence involves the application of knowledge and skills in a broad range of complex technical or professional work activities, performed in a wide variety of contexts and with a substantial degree of personal responsibility and autonomy. Responsibility for the work of others and the allocation of resources is often present.
<b>SVQ 5 (SCQF level 11)</b>	Competence involves the application of skills and a significant range of fundamental principles across a wide and often unpredictable variety of contexts. Very substantial personal autonomy and often significant responsibility for the work of others and for the allocation of substantial resources feature strongly, as do personal accountability.

For further information on SCQF go to [www.scqf.org.uk](http://www.scqf.org.uk).

## How are standards defined in SVQs?

All SVQs consist of standards which can be broken down into various parts.

**Units** define the broad functions carried out in the sector. The **Units** describe the activities which employees have to perform, and will require candidates to demonstrate certain skills or knowledge and understanding.

The quality of performance in what people must be able to do — how well they have to perform — is described by **Performance Criteria**. These may also be called **Performance Objectives or statements of competence** or **what candidates should do**.

The section on **knowledge requirements** says what candidates must know and understand, and how this knowledge applies to their jobs.

Increasingly, you may see changes to this format as standards become more user-friendly and are written in plain English. For example, there may be some standards containing **Range Statements** or **Evidence Requirements**, but over time these should disappear. You may, however, find that information on the context, nature and amount of evidence which is required to prove competence (which used to be given in Range Statements and Evidence Requirements) is now defined in the **assessment guidance** for the qualification. Assessment guidance is drawn up by the awarding body and is packaged along with the standards to form the SVQ.

## Who is involved in SVQs?

There are several roles:

- ◆ **the candidate:** the person who wants to achieve the SVQ (eg an employee)
- ◆ **the assessor\*:** the person who assesses the candidates and decides if they are competent (eg supervisor)
- ◆ **the internal verifier\*:** an individual nominated by the centre (eg a company) who ensures that assessors apply the standards uniformly and consistently (eg supervisor's line manager)
- ◆ **the External Verifier\*:** an individual appointed by SQA who ensures that standards are being applied uniformly and consistently across all centres offering the SVQ

\*Assessors and verifiers in centres will be asked by SQA to prove they have the appropriate occupational competence to assess and verify the SVQ. Occupational competence has been defined by the standards-setting body in the Assessment Strategy for this SVQ(s) — see SQA’s website: [www.sqa.org.uk](http://www.sqa.org.uk).

Assessors and verifiers are also expected to obtain an appropriate qualification in assessment and verification — this can be the Assessor/Verifier Units (the national standards for assessment and verification), or an alternative qualification which SQA also recognises.

## **The steps involved in assessing a candidate for an SVQ**

In deciding whether a candidate should achieve an SVQ, you will go through these stages:

- ◆ planning for assessment
- ◆ generating and collecting evidence of the candidate’s competence in the Units
- ◆ judging the evidence of the candidate’s ability and making an assessment decision based on the evidence
- ◆ recording the assessment decision and the candidate’s achievement

# 1 The SVQ in Plumbing

The SVQ in Plumbing has been developed by SummitSkills and is intended for people working in Plumbing and its associated industries.

These people may be working as apprentice plumbers. They will require skills and knowledge in installation, commissioning and servicing, fault diagnosis in plumbing and associated systems, practical skills, plumbing science and Health and Safety.

The SVQ is designed to be assessed in the workplace, or in conditions of the workplace. Examples of the settings or centres in which the SVQ is likely to be delivered include: Further Education colleges and training centres in partnership with industry employers and their managing agents.

## Structure of the SVQ

This section lists the Units which form the SVQ in Plumbing.

In a change to the previous system of one NOS Unit to one SVQ Unit, the SSC have introduced 'bite-sized' NOS. This means the SQA Unit number may not correspond to just one NOS Unit, but in some cases will correspond to a number of combined NOS Units. As a result each SSC NOS Unit does not have a corresponding SQA Unit number. The table below indicates each SQA Unit and code before listing the NOS Units and codes that are required to complete it.

Candidates must complete the seven mandatory Units plus one optional Unit.

Note: although not part of the SVQ, the additional Unit has to be completed to gain the modern apprenticeship in Plumbing.

### SVQ 3 in Plumbing at SCQF level 6 (G9W9 23)

#### Mandatory Units

SQA Ref	SCQF level	SCQF credit points	SSC Ref	Title
<b>F9H3 04</b>	<b>5</b>	<b>16</b>		<b>Apply Health and Safety Legislation and Working Practices (Mechanical Services)</b>
			M1	Apply Health Safety Legislation and Working Practices
<b>F9KH 04</b>	<b>5</b>	<b>16</b>		<b>Apply Environmental Legislation Working Practices and Principles (Mechanical Services)</b>
			M2	Apply Environmental Legislation, Working Practices and Principles (Mechanical Services)

SQA Ref	SCQF level	SCQF credit points	SSC Ref	Title
<b>F7G2 04</b>	<b>6</b>	<b>16</b>		<b>Maintain Working Relationships and Oversee Work Activities</b>
			M3	Maintain Effective Working Relationships
			M4	Provide Relevant People with Technical and Functional Information
			M5	Oversee the Work Environment
			M6	Organise the Working Environment
<b>F9H5 04</b>	<b>6</b>	<b>22</b>		<b>Install and Commission Hot and Cold Water Systems</b>
			M8	Identify Systems, Equipment and Components
			M27	Commission Mechanical Systems
			M10	Install Plumbing Systems, Equipment and Components
			M25	Inspect and Test Mechanical Systems and Components
			M13	Decommission Plumbing Systems, Equipment and Components
			M14	Identify Faults in Plumbing Systems, Equipment and Components
			M15	Rectify Faults in Plumbing Systems, Equipment and Components
			M12	Service and Maintain Mechanical Systems, Equipment and Components
<b>F9H6 04</b>	<b>6</b>	<b>22</b>		<b>Install and Commission Central Heating Systems</b>
			M8	Identify Systems, Equipment and Components
			M27	Commission Mechanical Systems
			M13	Decommission Plumbing Systems, Equipment and Components
			M14	Identify Faults in Plumbing Systems, Equipment and Components
			M15	Rectify Faults in Plumbing Systems, Equipment and Components
			M12	Service and Maintain Mechanical Systems, Equipment and Components
			M10	Install Plumbing Systems, Equipment and Components
			M25	Inspect and Test Mechanical Systems, Equipment and Components

SQA Ref	SCQF level	SCQF credit points	SSC Ref	Title
<b>F9H7 04</b>	<b>6</b>	<b>12</b>		<b>Carry out Work on Electrical Systems for the Control (and Supply) of Mechanical Services (Limited Scope)</b>
			M32	Establish Electrical Control (and Supply) of Mechanical Building Services Systems
<b>F9H8 04</b>	<b>6</b>	<b>12</b>		<b>Install Above Ground Drainage Systems</b>
			M8	Identify Systems, Equipment and Components
			M27	Commission Mechanical Systems
			M13	Decommission Plumbing Systems, Equipment and Components
			M14	Identify Faults in Plumbing Systems, Equipment and Components
			M15	Rectify Faults in Plumbing Systems, Equipment and Components
			M12	Service and Maintain Mechanical Systems, Equipment and Components
			M10	Install Plumbing Systems, Equipment and Components
			M25	Inspect and Test Mechanical Systems, Equipment and Components

### Optional Units

SQA Ref	SCQF level	SCQF credit points	SSC Ref	Title
<b>F9H9 04</b>	<b>6</b>	<b>16</b>		<b>Install and Commission Fuel Systems: Gas</b>
			M7	Prepare to Carry Out Work
			M8	Identify Systems, Equipment and Components
			M10	Install Plumbing Systems, Equipment and Components
			M25	Inspect and Test Mechanical Systems, Equipment and Components
			M27	Commission Mechanical Systems
			M13	Decommission Plumbing Systems, Equipment and Components
			M14	Identify Faults in Plumbing Systems, Equipment and Components
			M15	Rectify Faults in Plumbing Systems, Equipment and Components
			M12	Service and Maintain Mechanical Systems, Equipment and Components

SQA Ref	SCQF level	SCQF credit points	SSC Ref	Title
<b>F9HA 04</b>	<b>6</b>	<b>16</b>		<b>Install and Commission Fuel Systems: Oil</b>
			M7	Prepare to Carry Out Work
			M8	Identify Systems, Equipment and Components
			M10	Install Plumbing Systems, Equipment and Components
			M25	Inspect and Test Mechanical Systems, Equipment and Components
			M27	Commission Mechanical Systems
			M13	Decommission Plumbing Systems, Equipment and Components
			M14	Identify Faults in Plumbing Systems, Equipment and Components
			M15	Rectify Faults in Plumbing Systems, Equipment and Components
			M12	Service and Maintain Mechanical Systems, Equipment and Components
<b>F9HC 04</b>	<b>6</b>	<b>16</b>		<b>Install and Commissioning Fuel Systems: Solid Fuel</b>
			M7	Prepare to Carry Out Work
			M8	Identify Systems, Equipment and Components
			M10	Install Plumbing Systems, Equipment and Components
			M25	Inspect and Test Mechanical Systems, Equipment and Components
			M27	Commission Mechanical Systems
			M13	Decommission Plumbing Systems, Equipment and Components
			M14	Identify Faults in Plumbing Systems, Equipment and Components
			M15	Rectify Faults in Plumbing Systems, Equipment and Components
			M12	Service and Maintain Mechanical Systems, Equipment and Components

SQA Ref	SCQF level	SCQF credit points	SSC Ref	Title
F9HD 04	6	16		<b>Emergent Technologies</b> <b>Combined Option (two technologies to be covered:</b> <ul style="list-style-type: none"> <li>◆ <i>Carry out and complete work on solar water heating systems</i></li> <li>◆ <i>Carry out and complete work on heat pumps (Ground and Air Source)</i></li> <li>◆ <i>Carry out and complete work on water recycling systems (Rainwater and Grey water)</i></li> </ul>
			M7	Prepare to Carry Out Work
			M8	Identify Systems, Equipment and Components
			M10	Install Plumbing Systems, Equipment and Components
			M25	Inspect and Test Mechanical Systems, Equipment and Components
			M27	Commission Mechanical Systems
			M13	Decommission Plumbing Systems, Equipment and Components
			M14	Identify Faults in Plumbing Systems, Equipment and Components
			M15	Rectify Faults in Plumbing Systems, Equipment and Components
			M12	Service and Maintain Mechanical Systems, Equipment and Components

#### Additional Units

SQA Ref	SCQF level	SCQF credit points	SSC Ref	Title
F9HE 04				<b>Install Weathering Systems</b>
			M11	Install Weathering Systems

## **An Assessment Strategy for the SVQ**

As part of their review of the SVQ, the standards-setting body SummitSkills has developed an Assessment Strategy which defines a range of requirements:

- ◆ the occupational expertise of assessors and verifiers
- ◆ a definition of simulation
- ◆ definition of the workplace
- ◆ information on a model of independent assessment or external quality control

The relevant parts of the Assessment Strategy are published on SQA's website ([www.sqa.org.uk](http://www.sqa.org.uk)), and both SQA and centres must comply with these requirements.

## **Why would people be interested in the SVQ?**

People will take SVQs for a variety of reasons: to gain promotion, to prove their job competence, or for personal development. There will be other reasons too. One of the first things to do is to find out why your candidates want to do the SVQ, and to advise them of the appropriateness of the qualification. If anyone is acting as a coach or mentor to your candidates, they might help you to do this.

# How do candidates begin?

## Choosing the SVQ

You should make sure that candidates get guidance before starting out on an SVQ — they need advice to ensure that their existing job remit, skills, experience, and their plans for progression, are matched to the SVQ selected. It does not have to be you as the assessor, who carried out the matching process, but whoever has responsibility for this should ensure that the assessment opportunities available to the candidate are also considered.

### Requirement

Candidates must be employed in the Plumbing industry as a Plumbing Apprentice with an employer who satisfies the criteria set out by the industry.

### Examples

#### School leaver

Peter has just left school and is deciding which career to pursue. He discovered while at school that he preferred practical subjects of a technical nature along with technology. He was advised that an apprenticeship of a technical nature may suit his interests. He began contacting companies within the building services area with the hope of gaining an apprenticeship. During this time he enrolled on a 'National Progression Award' course at his local college which involved Plumbing and Electrical subjects. He enjoyed the course — seeing it as an extension of the subjects he liked at school and this confirmed that he wished to pursue a career in the building services sector. Towards the end of the course he gained a Modern Apprenticeship with a Plumbing company. He has now commenced a four year apprenticeship where he would be working with plumbing, central heating and gas systems. This apprenticeship involved Peter attending a college/private centre on a part-time basis in addition to the training received with his employer. His performance in both areas would be monitored and assessed using several different methods and approaches to gather evidence that would eventually lead to the SVQ 3 in Plumbing. Peter successfully gained the SVQ 3 in Plumbing and went on to complete his Modern Apprenticeship in Plumbing.

#### Mature candidate

Drew left school which he liked but he did not achieve many qualifications. He gained employment with a plumbing company as a labourer which later progressed to being a van driver. During these years he gained a lot of experience in the plumbing industry and was a valuable employee to the company. The company decided to give him the opportunity to gain a recognised qualification as a plumber and they formally enrolled him on the SVQ programme. He then followed the same route as would a school leaver (see example above).

## 2 Preparing to assess the SVQ

This section offers practical advice on how to begin to go about assessing your candidates for the SVQ. This advice is offered as examples of good practice — you may develop your own approaches to assessing your candidates which also work well.

### Your role and your candidate's role

Assessing the SVQ will involve several stages. Both you and the candidate should be clear on your roles in the assessment process before you begin.

#### Your role

- ◆ ensure candidates understand what is to be assessed and how it is to be assessed
- ◆ ensure the conditions and resources required for assessment are available
- ◆ help candidates to identify and gather evidence
- ◆ observe and record candidates carrying out the activities described in the standards — records should say what has been observed, how it was carried out, and what it demonstrates
- ◆ assess products of the candidate's own work
- ◆ question candidates and record results
- ◆ help candidates to present evidence
- ◆ authenticate the evidence candidates provide
- ◆ judge evidence and make assessment decisions
- ◆ identify gaps or shortfalls in candidates' competence
- ◆ provide feedback to candidates throughout the assessment process
- ◆ record achievement

#### Candidates' role

- ◆ prepare for assessment — become familiar with the standards, what is to be assessed and how it is to be assessed
- ◆ help to identify sources of evidence and how these could be assessed
- ◆ carry out activities, and/or produce products of own work, and/or answer questions
- ◆ gather and present evidence
- ◆ receive and act on feedback from the assessor

### Planning

In planning for assessment, you will find it helpful to meet with your candidate and plan what is to be assessed, in what way, and when and where the assessment is to take place. This discussion can be confirmed in the form of an agreed assessment plan between you and your candidate.

You should treat assessment plans as working documents — they can be updated and changed as you review progress with your candidate.

As you are planning assessment, don't forget to make the most of opportunities to *integrate* assessment. This means planning to assess an activity which draws on the contents of different Units or Elements. It can be a practical and cost-effective way of assessing your candidate's competence.

If you are a new assessor working towards your A/V Units (the national standards in assessment and verification) you will need copies of completed assessment plans as part of your evidence.

To help you plan for assessment, we have produced an assessment plan which covers Units:

- ◆ Unit 1: Apply Health and Safety Legislation and Working Practices (Mechanical Services)
- ◆ Unit 2: Apply Environmental Legislation, Working Practices and Principles (Mechanical Services)
- ◆ Unit 3: Maintain Working Relationships and Oversee Work Activities
- ◆ Unit 4: Install and Commission Hot and Cold Water Systems
- ◆ Unit 5: Install and Commission Central Heating Systems
- ◆ Unit 6: Carry Out Work on Electrical Systems for the Control (and Supply) of Mechanical Services
- ◆ Unit 7: Install Above Ground Drainage Systems
  
- ◆ Install and Commission Fuel Systems — Gas
- ◆ Install and Commission Fuel Systems — Oil
- ◆ Install and Commissioning Fuel Systems — Solid Fuel
- ◆ Emergent Technologies Combined Option (two technologies to be covered)
  
- ◆ Install Weathering Systems

## Delivery and assessment schedule — Year 1

	Week number*																Dec/Jan**										May/June***													
Unit	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1 Health and Safety Legislation	H S L 1																																							
2 Apply Environmental Legislation																	H S E L 1																							
3 Maintain Working Relationships																																								
4 Install and Commission Hot and Cold Water Systems	H C 1																H C 2																							
5 Install and Commission Central Heating Systems																	C H 1																							
6 Carry out work on electrical systems																																								
7 Install Above-Ground Drainage Systems	D 1																D 2																							
Practical pipework installation****	P P I 1																																							
Optional Unit (commences in Y3)																																								
Install Weathering Systems (Knowledge)	I W S 1. 1 –1.3																																							
Install Weathering Systems (Practical)																	I W S 1. 3 –1.5																							

\* Week numbers can vary depending on a centre's delivery pattern.

\*\* The first set of SOLAR assessments should be complete by the end of this period.

\*\*\* Second set of SOLAR assessments should be complete by the end of this period.

\*\*\*\* Practical work — Delivery and assessment will be ongoing throughout the identified period and will be at the discretion of the centre. For details see the relevant Unit.



## Delivery and assessment schedule — Year 3

	Week number																Dec/Jan													May/June										
Unit	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Optional Unit (Gas)	↑																																							
Optional Unit (Oil)	To be																																							
Optional Unit Solid fuel	confirmed																																							
Optional Unit Emergent Tech	↓																																							

## Selecting methods of assessment

The methods of assessment you use should be valid, reliable and practicable.

- ◆ By *valid* we mean that the assessment method should be appropriate to the standards.
- ◆ By *reliable* we mean that the assessment method should ensure consistent results when used with different candidates, different assessors and on different occasions.
- ◆ By *practicable* we mean that the method ensures that the assessment makes best use of available resources, equipment and time.

Before you assess a candidate, you must make sure that the methods of assessment you have chosen to use, along with any assessment materials (such as questions and sample answers) have been agreed within your centre through its system of internal quality assurance. This system is often called *internal verification* — its purpose is to help to ensure that assessment methods are valid, reliable and practicable.

There are both benefits and challenges when you are assessing SVQs in the workplace, or in conditions in the workplace.

The SVQ 3 in Plumbing is primarily assessed in a recognised centre through a formal training programme, with evidence being generated throughout the programme. A workplace record is generated and records all the activities that a candidate undertakes while in the workplace. This is added to the candidate portfolio as evidence.

### Example

A training officer will interview the candidate in the workplace on a regular basis gradually completing the 'workplace record'. The record is signed by a designated competent person representing the employer which is then passed to the centre for inclusion in the candidate's portfolio of evidence.

## Methods of assessment

Assessment may involve a range of assessment methods. For SVQs, some of the most commonly used methods are observation, product evidence, and questioning.

The SVQ 3 in Plumbing uses the SQA/SOLAR online method of assessment for the knowledge questioning. The benefits of this method are:

- ◆ Quality assured questions
- ◆ Random selected questions from a question bank
- ◆ Reduced requirement for internal verification
- ◆ Instant feedback for the candidate and assessor
- ◆ Objective marking

The challenges of this method might be:

- ◆ Administration of the system

### Observation

Observation by an assessor is considered to be the most valid and reliable method of assessment. It can be organised in a variety of ways:

- ◆ working alongside the candidate
- ◆ arranging for activities to take place

Observation by the assessor can often be supplemented by other types of assessment methods such as questioning. For example, it may be appropriate to ask oral questions of candidates as they carry out naturally-occurring activities.

Within the course structure of the programme practical activities take place as part of teaching and learning. This involves:

- ◆ observing a candidate's performance during the installation of a plumbing system as it relates to a bathroom suite would provide opportunities to ask oral questions on the candidate's component selection based on function and suitability
- ◆ observing a candidate interpreting working drawings prior to commencing an installation and producing a materials list — this would provide a situation that would allow oral questioning to determine his/her method of approach to the installation

## Product evidence

As candidates work towards achieving the SVQ, they will produce evidence in the form of products of their work. The nature of this evidence can vary widely depending on what the candidate's job entails, but examples of product evidence include:

- ◆ Pipe work details involving different pipe materials
- ◆ Sanitary appliance installation

Note: this product evidence would be of a simulated nature in a training centre/college.

## Questioning

Candidates have to show that they can meet the knowledge specifications for the SVQs, which would involve SQA's SOLAR assessment method. For these SVQs, Knowledge and Understanding is specified for each Unit:

- ◆ Unit 1: Apply Health and Safety Legislation and Working Practices (Mechanical Services)
- ◆ Unit 2: Apply Environmental Legislation, Working Practices and Principles (Mechanical Services)
- ◆ Unit 3: Maintain Working Relationships and Oversee Work Activities
- ◆ Unit 4: Install and Commission Hot and Cold Water Systems
- ◆ Unit 5: Install and Commission Central Heating Systems
- ◆ Unit 6: Carry Out Work on Electrical Systems for the Control (and Supply) of Mechanical Services
- ◆ Unit 7: Install Above-Ground Drainage Systems
  
- ◆ Install and Commission Fuel Systems — Gas
- ◆ Install and Commission Fuel Systems — Oil
- ◆ Install and Commissioning Fuel Systems — Solid Fuel
- ◆ Emergent Technologies Combined Option (two technologies to be covered):
  
- ◆ Install Weathering Systems (not part of SVQ but part of Modern Apprenticeship)

Questions will be asked in a variety of forms, such as oral questions, short answer written questions, and multiple-choice.

**Q** The main function of the cold feed pipe in a hot water system is to:

**A** supply the hot water system with water and provide a route for expanded water to the cistern. *(Stem and correct answer of a multiple-choice question.)*

**Q** To avoid frost damage pipes installed in buildings should be:

**A** insulated and kept in the heated parts of the building. *(Stem and correct answer of a multiple-choice question.)*

A 'workplace activity' document is used to record plumbing activities undertaken in the workplace. There should be one document for each of the three years of the SVQ course. It is supervised by the managing agent and signed by a competent person on behalf of the employer.

## **Simulation**

*Simulation* is any structured assessment exercise involving a specific task which reproduces real-life situations.

On some occasions, it may not be practical to assess a candidate in real work. Examples might be where the standards require candidates to carry out emergency or contingency procedures, or where client confidentiality is an issue, or where a candidate's job role does not cover all aspects of the qualification.

Summit Skills has defined what it regards as simulation, and has specified in the standards when simulation is and is not acceptable. The standards also state when candidates must demonstrate competence in the workplace.

For more details on simulation and what constitutes performance in the workplace, look at the Assessment Strategy on SQA's website: [www.sqa.org.uk](http://www.sqa.org.uk).

Within the Plumbing SVQ simulation is an accepted part of the assessment process.

Examples:

- ◆ Candidates are required to complete a bathroom installation and test it to industry standards.
- ◆ Candidates will be required to carry out activities on 'live' working plumbing and associated systems.

## **Other sources of evidence**

Other sources of evidence can be previous experience or learning, case studies or assignments.

SQA's *Guide to Assessment* (see section 5) has more advice on methods of assessment and how to ensure that your assessment is valid, reliable and practicable.

### 3 Generating evidence

The methods of assessment you use should generate sufficient evidence to demonstrate the candidate's competence.

We described earlier the circumstances in which you might choose to use different methods of assessment. Starting on the next page, this section gives you examples of forms which you can use to record and present evidence of:

- ◆ marking schedule
- ◆ workplace record

There are blank forms which you can copy and use in assessment in Appendix 1.

## Marking schedule and learner feedback sheet

<b>Name</b> Alan White	<b>Class</b> 1A	<b>Date</b> 10/06/2010
<b>Result</b> Pass	<b>Assessor</b> <i>W Smith</i>	<b>Date</b> 10/06/2010

Performance Criteria/marking schedule	Yes	No
(a) Joint width is between 10 mm to 12 mm.	✓	
(b) Joint loading is adequate for thickness of material used.	✓	
(c) Joint is proud of material used.	✓	
(d) Weld has penetrated the parent metal.		x
(e) A consistent weld pattern is produced.	✓	
(f) Safe working practices have been followed.	✓	

**Learner feedback**

(d) Weld penetration requires improvement, further practice required.

Overall welding technique is good.

**Learner's response**

**Learner's signature**

**Assessor's signature**

**Note to assessor: Learner feedback should relate to the marking schedule.**

# Workplace Evidence Record

Scottish Qualifications Authority (SQA) — Scottish & Northern Ireland Joint Industry Board For The Plumbing Industry (SNIJIB)

## Workplace Evidence Record — SVQ level 3 in MES Plumbing

Name of candidate ..... SVQ candidate number .....

Name of employer .....

*The above candidate, as part of the delivery of the SVQ level 3 in MES Plumbing, is required to provide ‘valid and reliable’ evidence of ‘commonly occurring competencies’. The candidate must be observed by a competent ‘nominated’ plumbing operative, identified for the purpose, carrying out plumbing work in his/her normal workplace environment. Candidates are not required to undertake the full range of work identified on this Workplace Evidence Record but to record the work they undertake from the range of work available to them from their employer.*

*The said nominated plumbing operative is required to attest and sign to the effect that:*

- a) the candidate did the work that is entered on this Workplace Evidence Record.*
- b) the work has been carried out to a satisfactory level in line with the employer’s expectations.*

*This Workplace Evidence Record will be completed **at least once per annum**, in conjunction with a monitoring review, by an approved monitoring officer or equivalent based on the evidence attested by the candidate and the nominated plumbing operative.*

<b>Cold Water</b> <i>Tick box if applicable</i>	<b>Hot Water</b> <i>Tick box if applicable</i>	<b>Central Heating</b> <i>Tick box if applicable</i>
<p><i>The candidate has:</i> <input checked="" type="checkbox"/></p> <p>1 Installed pipework using copper <input type="checkbox"/></p> <p>2 Installed pipework using plastic <input type="checkbox"/></p> <p>3 Installed cold water supply to include:            ♦ Direct <input type="checkbox"/>            ♦ Indirect <input type="checkbox"/></p> <p>4 Used various jointing procedures to include:            ♦ Soldered jointing <input type="checkbox"/>            ♦ Compression jointing <input type="checkbox"/>            ♦ Press type fittings <input type="checkbox"/>            ♦ Push type fittings <input type="checkbox"/></p> <p>5 Install storage cisterns <input type="checkbox"/></p> <p>6 Install sanitary appliances to include:            ♦ Bath <input type="checkbox"/>            ♦ Wash hand basin <input type="checkbox"/>            ♦ Water closet <input type="checkbox"/>            ♦ Sink unit <input type="checkbox"/>            ♦ Shower <input type="checkbox"/></p> <p>7 Install pumped cold water system <input type="checkbox"/></p> <p>8 Pressure test cold water installation <input type="checkbox"/></p>	<p><i>The candidate has:</i> <input checked="" type="checkbox"/></p> <p>1 Installed pipework using copper <input type="checkbox"/></p> <p>2 Installed pipework using plastic <input type="checkbox"/></p> <p>3 Installed hot water supply to include:            ♦ Direct <input type="checkbox"/>            ♦ Indirect <input type="checkbox"/>            ♦ Mains fed hot water <input type="checkbox"/>            ♦ Storage, non-storage <input type="checkbox"/></p> <p>4 Used various jointing procedures to include:            ♦ Soldered jointing <input type="checkbox"/>            ♦ Compression jointing <input type="checkbox"/>            ♦ Press type fittings <input type="checkbox"/>            ♦ Push type fittings <input type="checkbox"/></p> <p>5 Install hot water cylinder <input type="checkbox"/></p> <p>6 Install sanitary appliances to include:            ♦ Bath <input type="checkbox"/>            ♦ Wash hand basin <input type="checkbox"/>            ♦ Water closet <input type="checkbox"/>            ♦ Sink unit <input type="checkbox"/>            ♦ Shower <input type="checkbox"/></p> <p>7 Install pumped hot water systems <input type="checkbox"/></p> <p>8 Checked hot water installation for soundness <input type="checkbox"/></p>	<p><i>The candidate has:</i> <input checked="" type="checkbox"/></p> <p>1 Installed a central heating boiler <input type="checkbox"/></p> <p>2 Installed flow and return pipework to:            ♦ Heat emitters <input type="checkbox"/>            ♦ Hot water cylinder <input type="checkbox"/>            ♦ Underfloor Heating <input type="checkbox"/></p> <p>3 Installed associated controls/components to:            ♦ Heat emitters <input type="checkbox"/>            ♦ Hot water cylinder <input type="checkbox"/>            ♦ System controls <input type="checkbox"/>            ♦ Underfloor heating <input type="checkbox"/></p> <p>4 Fill and purge the heating system <input type="checkbox"/></p> <p>5 Test and commission the heating system to include:            ♦ Cleansing and flushing <input type="checkbox"/>            ♦ Install system Inhibitor <input type="checkbox"/>            ♦ Balance heating system <input type="checkbox"/></p> <p>6 System handover to include:            ♦ Final completion of appropriate documentation <input type="checkbox"/>            ♦ Explanation of system operation <input type="checkbox"/>            ♦ Service and maintenance advice <input type="checkbox"/></p>

<b>Installation Practices</b> <i>Tick box if applicable</i>	<b>Electricity</b> <i>Tick box if applicable</i>	<b>Maintain Working Relationships</b> <i>Tick box if applicable</i>
<p><i>The candidate has:</i></p> <p>1 Applied safety practices in:</p> <ul style="list-style-type: none"> <li>◆ Working at heights</li> <li>◆ The use of tools and equipment</li> <li>◆ Wearing appropriate PPE equipment</li> <li>◆ The selection of appropriate tools and equipment for given tasks</li> </ul> <p>2 Installation practices to include:</p> <ul style="list-style-type: none"> <li>◆ Fixing to a variety of building materials</li> <li>◆ Measure, mark, set out accurately for given tasks</li> <li>◆ Measure, mark, set out and bend pipework accurately</li> </ul>	<p><i>The candidate has:</i></p> <p>1 Apply safe isolation procedures to an electrical power supply</p> <p>2 Apply safe working practices in the installation of controls and appliances</p> <p>3 Test electrical controls and appliances</p> <p>4 Conduct electrical fault finding techniques</p>	<p><i>The candidate has:</i></p> <p>1 Able to effectively communicate with other people</p> <p>2 Able to establish good working relationships with other people in the plumbing industry</p> <p>3 Able to interpret technical information from working drawings</p> <p>4 Able to provide sources of information requested by others in the plumbing industry</p>

<b>Domestic Drainage and Sanitary Plumbing</b> <i>Tick box if applicable</i>	<b>Leadwork</b> <i>Tick box if applicable</i>	<b>Environmental Awareness</b> <i>Tick box if applicable</i>
<p><i>The candidate has:</i> <input checked="" type="checkbox"/></p> <ol style="list-style-type: none"> <li>1 Installed above ground soil, waste and vent pipes to sanitary appliances <input type="checkbox"/></li> <li>2 Installed rainwater gutters and downpipes <input type="checkbox"/></li> <li>3 Applied soundness tests to drainage systems <input type="checkbox"/></li> <li>4 Apply a variety of jointing techniques to drain ware to include:               <ul style="list-style-type: none"> <li>◆ Push fit type joints <input type="checkbox"/></li> <li>◆ Solvent weld cement <input type="checkbox"/></li> <li>◆ Mechanical <input type="checkbox"/></li> <li>◆ Cement <input type="checkbox"/></li> </ul> </li> </ol>	<p><i>The candidate has:</i> <input checked="" type="checkbox"/></p> <ol style="list-style-type: none"> <li>1 Apply safety practices in the use of oxy-acetylene equipment <input type="checkbox"/></li> <li>2 Apply safety practices in the use of lead <input type="checkbox"/></li> <li>3 Apply lead welding skills to a variety of tasks <input type="checkbox"/></li> <li>4 Apply bossing and forming skills to a variety of tasks <input type="checkbox"/></li> </ol>	<p><i>The candidate has:</i> <input checked="" type="checkbox"/></p> <ol style="list-style-type: none"> <li>1 Applies installation methods to reduce material wastage <input type="checkbox"/></li> <li>2 Apply the use of alternative low risk materials, products and materials <input type="checkbox"/></li> <li>3 Apply the appropriate methods/policies for the disposal of waste materials <input type="checkbox"/></li> <li>4 Apply reporting procedures in the event of hazardous materials <input type="checkbox"/></li> <li>5 Give advice to the customer on the effective and economical use of energy systems <input type="checkbox"/></li> </ol>

	<b>Emergent Technologies</b> <i>Tick box if applicable</i>	<b>Fuel Options</b> <i>Tick box if applicable</i>
	<p><i>The candidate has:</i></p> <p>1 Installed an air source heat pump, associated pipework and components <input checked="" type="checkbox"/></p> <p>2 Installed a ground source heat pump, associated pipework and components <input type="checkbox"/></p> <p>3 Installed domestic solar hot water system, associated pipework and components <input type="checkbox"/></p>	<p><i>The candidate has:</i></p> <p>1 Installed gas boilers, associated pipework, controls, and commissioned <input checked="" type="checkbox"/></p> <p>2 Installed solid fuel boilers, associated pipework, controls and commissioned <input type="checkbox"/></p> <p>3 Installed oil boilers, associated pipework, controls and commissioned <input type="checkbox"/></p>

### Declarations

<b>Candidate</b>	<b>Nominated Plumbing Operative</b>	<b>Monitoring Officer</b>
<p>I....., the candidate, certify that I have undertaken the work recorded above.</p> <p>Signature .....</p> <p>Date .....</p>	<p>I....., the competent plumbing operative, certify that I have observed the candidate undertaking the range of work indicated to a satisfactory level in line with the employer's expectations.</p> <p>Signature .....</p> <p>Date .....</p>	<p>I....., the candidate's Monitoring Officer, have interviewed the candidate, and his nominated plumbing operative, and I am satisfied that the candidate has carried out the range of work as indicated above.</p> <p>Signature .....</p> <p>Date .....</p>

## **Guidance and support to candidates**

At all times during the assessment process — from planning through to making your assessment decision — feedback should be on-going, clear and constructive. Feedback should be given against the national standards by relating it to the evidence provided, including the knowledge specifications.

Where there are any shortfalls in a candidate's competence, you should discuss these with your candidate and make plans for re-assessment.

## **Judging candidate evidence and making an assessment decision**

In judging candidate evidence, you must be satisfied that your candidates can work consistently to the required standard, and that the evidence they have produced is their own. You must consider whether your candidate understands and applies the knowledge evidence and how this links to performance evidence.

Evidence must:

- ◆ be relevant to the SVQ
- ◆ be authentic
- ◆ show current competence
- ◆ be sufficient to help you form a decision about the candidate's competence

### **Insufficient evidence**

You have to judge whether the candidate has produced enough evidence required by the standards for you to reach a decision about their evidence.

Where there is insufficient evidence, you should say this to your candidate. You should tell them that it is not that they are not yet competent — there is simply not enough evidence on which to make a decision.

In this situation, your feedback to your candidates must help them produce more evidence and/or plan for further assessment.

## 4 Recording achievement

You should retain all evidence — clearly referenced — for internal and external verification.

The candidate's evidence is normally kept in a file, often called a *portfolio*. These documents help you and your candidates to collect, present and cross-reference the evidence to the national standards. They are also a means of recording your assessment decisions, and they tell an External Verifier what stage a candidate has reached in achieving the SVQ.

Recording documents do not need to be paper-based — it is possible to use an electronic format for collecting and structuring the evidence. Whatever format you and your candidates choose to use, the documents must show what evidence was generated, the assessment decisions you made, how the evidence meets the standards, and where the evidence can be located. You should avoid photocopying items simply to put them in a portfolio — a clear explanation of where the evidence can be found (for example, in a filing cabinet) may be sufficient for the External Verifier to follow it up and include it in the visit.

There are various reasons why record-keeping is so important:

- ◆ it provides a way of tracking a candidate's progress in achieving an SVQ
- ◆ it helps candidates to make claims for certification of their competence
- ◆ internal verifiers and External Verifiers use the records to sample assessment decisions
- ◆ it helps us to monitor the quality assurance of our qualifications

If your candidates' evidence is incomplete, or cannot be located, or if there is inaccurate cross-referencing to the standards, there is a risk that an internal verifier or External Verifier will be unable to confirm your assessment decisions.

To help you and your candidate present evidence and record your assessment decision, we have provided examples of the forms which you and your candidate might use to compile the portfolio.

- ◆ Completing the Unit progress record
- ◆ Using the evidence index
- ◆ Completing the Element achievement record

These forms are also used in SQA's portfolio.

## **Completing the Unit progress record**

You should complete this form each time your candidate achieves a Unit from the SVQ by adding your signature and the date next to the relevant Unit.

At this stage, candidates should make sure they have completed the recording documents correctly and that their evidence can be easily located. Only then should they circle the relevant Unit number at the top of the form. This enables both of you to see at a glance what stage the candidate is at in their SVQ.

## Unit progress record

**Qualification and level** SVQ 3 in Plumbing at SCQF level 6

**Candidate** Alan White

To achieve the whole qualification, you must prove competence in seven **mandatory** Units and one **optional** Unit.

### Unit Checklist

<b>Mandatory</b>	M1	M2		<b>HC 1</b>	<b>HC 2</b>	<b>HC 3</b>	<b>HC 4</b>
	<b>CH 1</b>	<b>CH 2</b>	<b>CH 3</b>	<b>ES 1</b>	<b>ES 2</b>	<b>D 1</b>	<b>D 2</b>
<b>Optional</b>	Gas	Oil	Solid	Emer			
<b>Additional</b>	M11						

### Mandatory Units achieved

Unit number	Title	Assessor's signature	Date
M1	Apply Health and Safety Legislation and Working Practices (Mechanical Services)	<i>W Smith</i>	04 Dec 2010
M2	Apply Environmental Legislation Working Practices and Principles (Mechanical Services)	<i>W Smith</i>	08 March 2011
	Maintain Working Relationships and Oversee Work Activities <ul style="list-style-type: none"> <li>◆ Maintain Effective Working Relationships (M3)</li> <li>◆ Provide Relevant People with Technical and Functional Information (M4)</li> <li>◆ Oversee the Work Environment (M5)</li> <li>◆ Organise the Working Environment (M6)</li> </ul>	<i>W Smith</i>	12 June 2011
	Install and Commission Hot and Cold Water Systems <ul style="list-style-type: none"> <li>◆ Identify Systems, Equipment and Components (M8)</li> <li>◆ Commission Mechanical Systems (M27)</li> <li>◆ Install Plumbing Systems, Equipment and Components (M10)</li> <li>◆ Inspect and Test Mechanical Systems and Components (M25)</li> <li>◆ Decommission Plumbing Systems, Equipment and Components (M13)</li> <li>◆ Identify Faults in Plumbing Systems, Equipment and Components (M14)</li> <li>◆ Rectify Faults in Plumbing Systems, Equipment and Components (M15)</li> </ul>		

	<ul style="list-style-type: none"> <li>◆ Service and Maintain Mechanical Systems, Equipment and Components (M12)</li> </ul>		
	<p>Install and Commission Central Heating Systems</p> <ul style="list-style-type: none"> <li>◆ Identify Systems, Equipment and Components (M8)</li> <li>◆ Commission Mechanical Systems (M27)</li> <li>◆ Decommission Plumbing Systems, Equipment and Components (M13)</li> <li>◆ Identify Faults in Plumbing Systems, Equipment and Components (M14)</li> <li>◆ Rectify Faults in Plumbing Systems, Equipment and Components (M15)</li> <li>◆ Service and Maintain Mechanical Systems, Equipment and Components (M12)</li> <li>◆ Install Plumbing Systems, Equipment and Components (M10)</li> <li>◆ Inspect and Test Mechanical Systems, Equipment and Components (M25)</li> </ul>		
	<p>Carry Out Work on Electrical Systems for the Control (and Supply) of Mechanical Services (Limited Scope) (M32)</p>		
	<p>Install Above Ground Drainage Systems</p> <ul style="list-style-type: none"> <li>◆ Identify Systems, Equipment and Components (M8)</li> <li>◆ Commission Mechanical Systems (M27)</li> <li>◆ Decommission Plumbing Systems, Equipment and Components (M13)</li> <li>◆ Identify Faults in Plumbing Systems, Equipment and Components (M14)</li> <li>◆ Rectify Faults in Plumbing Systems, Equipment and Components (M15)</li> <li>◆ Service and Maintain Mechanical Systems, Equipment and Components (M12)</li> <li>◆ Install Plumbing Systems, Equipment and Components (M10)</li> <li>◆ Inspect and Test Mechanical Systems, Equipment and Components (M25)</li> </ul>		

**Optional Units achieved**

<b>Unit number</b>	<b>Title</b>	<b>Assessor's signature</b>	<b>Date</b>
Gas	Install and Commission Fuel Systems — Gas		
Oil	Install and Commission Fuel Systems — Oil		
Solid	Install and Commission Fuel Systems — Solid Fuel		
Emer	Install and Commission Fuel Systems — Emergent Technology		

**Additional Unit achieved**

<b>Unit number</b>	<b>Title</b>	<b>Assessor's signature</b>	<b>Date</b>
M11	Install Sheet Weathering Systems		

# 5 Further information

## What else should I read?

The publications listed here provide additional information on how to implement SVQs. Details of these and other SQA publications are available on our website at **www.sqa.org.uk** on the 'Publications, Sales and Downloads' section. They can be ordered from SQA's Business Development and Customer Support Team — telephone 0303 333 0330. Please note that there may be a charge for some of these publications.

*Assessor/Verifier Units: assessment guidance*

*External Verification: A Guide for Centres*

*Guide to Assessment*

*Introduction to Assessment Arrangements for Schools and Colleges*

*SQA's Quality Framework: a guide for centres*

*Operational Help Centre*

The Operational Guide for Centres has been replaced by the online Operational Help Centre on **www.sqa.org.uk**

# **Appendix 1: Blank recording forms**

## Unit progress record

Qualification and level \_\_\_\_\_

Candidate \_\_\_\_\_

To achieve the whole qualification, you must prove competence in xx **mandatory** Units and xx **optional** Units.

### Unit Checklist

<b>Mandatory</b>									
<b>Optional</b>									

### Mandatory Units achieved

Unit number	Title	Assessor's signature	Date

### Optional Units achieved

Unit number	Title	Assessor's signature	Date



## Marking schedule and learner feedback sheet

Name		Class	Date
Result	Assessor		Date

Performance Criteria/marketing schedule	Yes	No
(a)		
(b)		
(c)		
(d)		
(e)		
(f)		

**Learner feedback**

**Learner's response**

**Learner's signature**

**Note to assessor: Learner feedback should relate to the marking schedule.**