

**SummitSkills Consolidated Assessment Strategy for
Scottish Vocational Qualifications and Other Competence Based
Qualifications for the Building Engineering Services Sector in
Scotland**

**Electrical Installation
Domestic Plumbing & Heating
Heating and Ventilating, Ductwork, Refrigeration and Air Conditioning**

Assessment Strategy. Post Consultation (d09)

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1. Definitions of terminology used in this Assessment Strategy

Terminology	Explanation/Definition
SCQF	Scottish Credit and Qualifications Framework.
“SVQ”	The term “SVQ” is used to identify a Scottish Vocational Qualification
Occupational Competence	The knowledge, understanding and skills needed by an individual to carry out a particular job role/responsibility safely and in accordance with approved industry and technical standards and working practices.
Assessment of Occupational Competence	A term specifically relating to a means of assessment of the units and qualifications that are the subject of this assessment strategy. It is an independent holistic assessment of the learner’s occupational competence via an assessment process as determined by the industry and endorsed by SummitSkills and the Awarding Organisation(s). It refers to all aspects of SVQ assessment including the Final Integrated Competence Assessment (FICA) for the Electrical Installation and the Final Competence Assessment (FCA) for the Domestic Plumbing and Heating and HVACR vocational areas.
National Occupational Standards (NOS)	Standards of performance which specify what an individual needs to be able to do, know and understand to demonstrate their competence in the workplace.
Knowledge Unit	A unit that gives the learner the opportunity to demonstrate their knowledge and understanding of identified topics and subject areas.
Performance Unit	A unit that gives the learner the opportunity to demonstrate they have the practical skills that are in keeping with the relevant National Occupational Standards for identified activities.
Competence Unit	A unit that gives the learner the opportunity to demonstrate their understanding and application of specific knowledge and practical skills and is assessed in a realistic work environment or, where naturally occurring evidence is scarce, through simulated conditions using particularly identified “relevant practical activities”.
Simulation and Simulated Conditions	An environment in which simulated activities take place involving the replication of a real working environment. The criteria for which must be to supply fit-for-purpose tools, equipment, full-size components, realistic deadlines and other commercial requirements.
Realistic Working Environment	An environment in which real work activities take place under real working conditions in keeping with real commercial situations
Independent Assessment Structure	The independent assessment structure must not be a part of the learner’s working or training environment and will provide facilities for assessment in keeping with the industry arrangements (See Annex 3). Therefore, the learner will be independently assessed by an independent assessor in keeping with an industry determined specification.
Key safety-critical Aspects	Any “technical” activity with the potential to harm/damage personnel/property if carried out incorrectly (See section 4).
Technically critical	Any activity that is fundamental to the safe and efficient operation of equipment, components and systems.
SSO	Standards Setting Organisation (SummitSkills is SSO for the BES Sector)

2. Purpose and scope of the Assessment Strategy

The purpose of this assessment strategy is to ensure that qualifications and associated units that attest to occupational competence in an identified role are;

- Based on the relevant approved National Occupational Standards
- Assessed to industry endorsed assessment principles and methodologies
- Fit for purpose
- Confirm occupational competence

The assessment of units within a qualification structure which are available as “stand alone units” must also be undertaken in accordance with this assessment strategy to ensure that assessment requirements and methodologies are consistently applied in accordance with the principles of the “Assessment of Occupational Competence”. Units can be identified as;

- Knowledge Units
- Performance Units
- Competence Units

Note: SVQ qualification structures are designed by directly using NOS as units of competence.

2.1 The scope of this Assessment Strategy relates to relevant SVQs and CBQs and any associated units for the principal industries in the Building Engineering Services sector of Electrical Installation, Domestic Plumbing and Heating, Heating and Ventilation, Air Conditioning and Refrigeration. The full list of qualifications is provided in Annex 1. This Assessment Strategy outlines the principles and requirements to be applied to the assessment of knowledge, understanding, performance and/or competence for these qualifications and relevant associated units.

2.2 The qualifications identified in Annex 1 are set at “operative level” which in the context of this strategy is defined as:

Those skilled individuals at level 3 (subject to their role) with responsibilities for the installation, maintenance, servicing and/or repair of the systems, services and equipment for climate control, communication, heating, lighting, power, security, water within the sector’s principal industries of Electrical Installation, Domestic Plumbing and Heating, Heating and Ventilation, Air Conditioning and Refrigeration Air Conditioning and Refrigeration..

It should be noted that any additional “Occupational Competence Qualifications/Units” developed for the industries and occupations in the Building Engineering Service sector must be compliant with this assessment strategy. This includes amendments and revisions to those qualifications identified in Annex 1 and relevant associated units developed after the publication of this strategy.

2.3 This strategy is designed for qualifications and units that are delivered in accordance with the requirements of qualifications accredited by SQA Accreditation.

3. Principles of Assessment

3.1 Given the nature of the potentially hazardous work undertaken by operatives in the key industries of the Building Engineering Services sector (2.2), the methodology(s) of assessment that ensures the candidate is occupationally competent will be determined by the industry for which the qualification and relevant associated unit(s) is designed.

3.2 Qualifications attesting to “Occupational Competence” will have a structure that has been determined by SummitSkills.

3.3 Unit and qualification assessment requirements will set out the scope of evidence required in terms of components, equipment, enclosures, services, statutory and non-statutory regulations and industry standards and systems.

3.4 Methods of assessment

- 3.4.1 Knowledge Units – projects/assignments, external written assessments/tests and professional discussion
 - 3.4.2 Performance Units - practical activities in the work place or as appropriate in simulated conditions
 - 3.4.3 Competence Units – Practical activities/assignments in simulated conditions. Identified knowledge is assessed in accordance with 3.4.1 above.
- 3.5 The assessment instruments for Knowledge Units must be as identified in The “Additional Information” of the unit, be fit-for-purpose and be one or more of:
- 3.5.1 Knowledge tests - centrally set, centrally marked, internally quality assured by the Centre(s) and external quality assured by the Awarding Organisation(s) who offer a unit(s) or qualification(s) identified in this strategy.
 - 3.5.2 Knowledge based projects or assignments that are centrally set, Centre marked, internal quality assured by the Centre(s) and externally quality assured by the Awarding Organisation(s) who offer a unit(s) or qualification(s) identified in this strategy.
 - 3.5.3 Knowledge based professional discussion that is centre devised following centrally specified guidance, Centre marked, internally quality assured by the Centre(s) and externally quality assured by the Awarding Organisation(s) who offer a unit(s) or qualification(s) identified in this strategy. Note that all HVACR assessments are centre-devised.
- 3.6 The environment in which the evidence and the quantity of evidence for **Performance Units** must be assessed, i.e. sourced from the real working environment or simulated conditions, will be detailed in the “Additional Requirements” for each Performance Unit. This could be applicable to all the Learning Outcomes in the unit or particular Learning Outcomes.
- 3.7 Evidence that is sourced from the real working environment for **Performance Units** must be naturally occurring and can be generated by;
- 3.7.1 Direct observation of performance in the workplace by a qualified assessor and/or testimony from an expert witness subject to the activity being assessed (also see 3.6 above). This will be the primary source of evidence.
 - 3.7.2 Candidate’s reflective account of performance.
 - 3.7.3 Work plans and work based products e.g. diagrams, drawings, specifications, customer testimony, authorised & authenticated photographs/ images and audio-visual records of work completed.
 - 3.7.4 Evidence from prior achievements that demonstrably match the requirements of the Performance Unit.
 - 3.7.5 Witness testimony (See Expert Witness Annex 2 – 2.4).
- 3.8 Meeting the assessment requirements of **Performance Units** (3.7) will need initial discussions and assessment planning between the learner and assessor, as an essential activity to identify opportunities to assess real working environment evidence, gaps that need to be filled or opportunities to recognise the prior achievement of the learner.
- 3.9 The assessment methodology for the assessment of a **Competence Unit** will be centrally-set or centre devised and centrally verified in keeping with design and assessment principles for the unit’s assessment assignment, agreed between SummitSkills and the Awarding Organisations.
- 3.10 Competence must be demonstrated **consistently over a period of time and on more than one occasion** (e.g. using workplace evidence). However SummitSkills does not wish to stipulate what that period of time might be as this is a decision for the Assessor. Based on their own professional judgement Assessors must be capable of identifying when competence has been demonstrated by the learner.
- 3.11 Learners should not be put forward for an “**Assessment of Occupational Competence**” until they are **deemed ready to be assessed as competent**. This underpins the assumption that the learner has sufficient technical expertise, knowledge, skill and maturity to meet the expectations of employers in terms of “Occupational Competence”.
- 3.12 The “**Occupational Competence**” of learners **must** be assessed in accordance with industry requirements as prescribed in Annex 3 and Annex 4 of this strategy.

4. Key Safety-Critical Aspects

Any demonstration of competence involving the key safety-critical aspects listed below must be a fundamental element of the “**Assessment of Occupational Competence**” as determined by the industry

<p><u>Electrical installation</u></p>	<ul style="list-style-type: none"> ➤ Safe isolation, Termination and connection ➤ Inspection, testing and commissioning ➤ Risk assessments and safe working practices ➤ Diagnosing and correcting faults
<p><u>Heating and Ventilating</u> <u>/ Duct work</u></p>	<ul style="list-style-type: none"> ➤ Activities related to limited scope electrical work ➤ As relevant, the installation, connection and servicing/maintenance of fuel systems and equipment – gas; oil; solid fuel ➤ As relevant, the installation, connection and servicing/maintenance of hot/cold water systems and equipment – unvented water; backflow prevention ➤ As relevant, the installation, connection and service/maintenance of ductwork systems and equipment
<p><u>Refrigeration and Air Conditioning</u></p>	<ul style="list-style-type: none"> ➤ Activities relating to F Gas installations/service and maintenance ➤ Activities relating to limited scope electrical work ➤ Thermal pipe joining methods – welding; brazing; soldering activities ➤ Assessment and Certification as required by F Gas and Ozone Depleting Substances Regulations ➤ Handling of refrigerants (ODS, Ammonia, HC and CO₂)
<p><u>Domestic Plumbing and Heating</u></p> <ul style="list-style-type: none"> • SVQ: this part is not delivered at 1st and 2nd year and is delivered as one of the options in year 3 • SVQ: Energy efficiency is not delivered as a separate competency 	<ul style="list-style-type: none"> ➤ Activities related to limited scope electrical work - Candidates must be assessed under a 3:1 ratio of candidates to assessor for limited scope electrical work associated with plumbing. ➤ As relevant, the installation, connection and servicing/maintenance of fuel systems and equipment – gas; oil; solid fuel ➤ As relevant, the installation, connection and servicing/maintenance of hot/cold water systems and equipment – unvented water; backflow prevention ➤ Competence in the undernoted areas must meet the minimum standards laid down by the *appropriate body listed below and for an SVQ candidate on achievement of the full SVQ result in separate operative registration/recognition with the appropriate body. This in normal course will require a candidate as part of their SVQ to undertake bespoke training leading to an assessment in order to meet the requirements of the appropriate registration/certification/industry body. <ul style="list-style-type: none"> ○ Water Byelaws (2014)– (WRAS) ○ Unvented Hot Water – Building Regulations/Standards ○ Energy Efficiency - Building Regulations/Standards ○ *Gas – Statutory Gas Registration Body ○ *Oil – OFTEC ○ *Solid Fuel – HETAS ○ Electrical – Limited scope electrical work ○ Emergent Technologies – *MCS or equivalent

5. Simulation and Simulated Conditions

Situations where simulation is either permissible or mandatory.

5.1. Permissible:

Simulation can take place in those rare circumstances where the opportunities to collect naturally occurring evidence are limited or absent and the learner lacks evidence for completion of the unit. However, this scenario is anticipated to be rare in relation to the qualifications and the units to which this strategy applies given the inherent flexibility of the evidence-gathering process. Simulation must be agreed in advance between the EV and Industry Regulators.

5.2. Mandatory:

Simulation **must take** place for industry identified key-safety critical aspects (Section 4) of the qualification as listed in Annex 1 and their relevant associated units.

The activities that will be undertaken demonstrating competence in these areas are contained within each industry's "**Assessment of Occupational Competence**" arrangement and this must NOT be undertaken before the learner has demonstrated sufficient technical expertise, knowledge, skill and maturity.

Where simulation does take place it must be in a realistic working environment and an independent assessment structure. (See definitions).

Reasons for the use of simulation should be made clear and agreed by the Awarding Organisation, External Verifier and SummitSkills the SSO.

6. Quality Assurance of the Assessment Process:

The assessment requirements for SVQs and units therein identified in Annex 1 of this Assessment Strategy **must** be, in terms of process and quality assurance, compliant with all relevant Awarding Organisation criteria and guidance.

Knowledge units must be assessed in accordance with 3.5 above.

The requirements of Assessors, Internal and External Verifiers are detailed in **Annex 2**.

Annex 1 – SCQF Qualification Titles

ELECTRICAL INSTALLATION

SVQ 3 Electrical Installation at SCQF Level 7

HEATING, VENTILATION, DUCTWORK, REFRIGERATION & AIR CONDITIONING

SVQ 3 Heating and Ventilating Industrial and Commercial Installation at SCQF 6

SVQ 3 Service, Maintain and Commission Building Engineering Services at SCQF 7

SVQ 3 Heating and Ventilating Ductwork Planning and Installation at SCQF 6

SVQ 3 Install, Commission and Maintain Air Conditioning Systems at SCQF 6

SVQ 3 Install, Commission and Maintain Refrigeration Systems at SCQF 6

DOMESTIC PLUMBING AND HEATING

SVQ 3 Domestic Plumbing and Heating at SCQF Level 7

Note that the SVQ 3 Domestic Plumbing and Heating at SCQF Level 7 has the following optional units:

- Install and Commission Fuel Systems; Gas (ACS)
- Install and Commission Fuel Systems; Oil
- Install and Commission Fuel Systems; Solid Fuel,
- Emergent Technologies

ENVIRONMENTAL TECHNOLOGIES (Plumbing)

Level 3 Award unit in Emerging Technologies (optional award unit within the SVQ 3 Domestic Plumbing and Heating at SCQF Level 7) to include;

- Working Principles of micro renewable technologies, water harvesting and recycling technologies PLUS

Plus two out of three options from;

- Solar Thermal Domestic Hot Water
- Heat Pumps
- Grey Rainwater

Annex 2 –The requirements of Assessors, Internal Verifiers and External Verifiers for Building Services Engineering competent-based qualifications and relevant associated units

2.1 Assessors must:

2.1.1

Be working towards or have achieved one or both of the following standards and continue to practice to those standards;

- Learning and Development Unit 9D - Assess workplace competence using direct methods (replacing Unit A2)
- Learning and Development Unit 9DI – Assess workplace competences using direct and indirect methods (replacing Units A1/2)

OR

2.1.2

Have achieved Learning and Development Unit 9D or Learning and Development Unit 9DI or equivalent and possess CPD evidence of practicing to Learning and Development Unit 9D or Learning and Development Unit 9DI.

OR

2.1.3

Have other suitable “equivalent assessor qualifications” endorsed by SummitSkills and the Awarding Organisation(s), which apply the principles of the Learning and Development Unit 9D and Learning and Development Unit 9DI Units.

For the purposes of quality assurance in centres, other Assessor qualifications which have been accredited by Ofqual may be accepted where the qualifications are based on the above Learning and Development Units. They must be endorsed by SummitSkills and the Awarding Organisation(s).

2.1.4 Occupational Competence

Have verifiable relevant industry experience and current knowledge of industry working practices and techniques relevant to the occupational working area. This verifiable evidence must be **at or above the level being assessed** and include one or more of the following:

- A relevant qualification
- Registration with the appropriate industry registration body at the relevant occupational level and grade
- Verifiable occupational competence in the qualification(s) and unit(s) they will be assessing
- Demonstrate an understanding and application of the assessment process for the qualification(s) and unit(s) they will be assessing

For particular units/qualifications the verifiable evidence may need to be above the level of the unit/qualification being assessed. This requirement will be detailed in the “Additional Information” pertaining to specific units/qualifications.

Assessment of competence-based units/qualifications for electrotechnical and mechanical services occupations will require assessors **to have the relevant qualification** that certifies their competence in key technical areas pertinent to the completion of the unit/qualification.

This occupational competence must include up-to-date knowledge of each industry (for which the assessment is taking place), its settings, legislative and regulatory requirements, codes of practice and guidance.

2.1.5 Assessor Continuing Professional Development

The occupational competence of assessors must be updated on a regular basis and be periodically reconfirmed via continuing professional development (CPD) via the assessment centres and quality assured by the Awarding Organisation.

It is the responsibility of each assessor to identify and make use of opportunities for CPD, such as industry conferences, access to trade journals, and SSO and Professional Body/Trade Association events, at least twice annually to enhance and upgrade their professional development and technical knowledge. It is imperative that records are kept of all such CPD opportunities/occasions and that they provide evidence of cascading such technical knowledge and industry intelligence to all relevant colleagues.

2.2 Internal Verifiers (IV)

2.2.1 IV Role and Competence

SummitSkills considers the main focus of IVs to be the quality assurance of assessment procedures. The IV is also required to have a minimum of occupational experience evidenced by having a Building Services Engineering sector related qualification or proven sector competence/experience plus access to relevant “occupational expertise” to enable them to conduct their role as internal verifier appropriately. This evidence and access to “occupational expertise” is internally quality assured by the Centre(s) and externally quality assured by the Awarding Organisation.

2.2.2. Internal verifiers must:

Be working towards or have achieved the Learning and Development Unit Internally Monitor and Maintain the Quality of Workplace Assessment (L&D11 replaces V1 and D34) and continue to practice to that standard;

OR

Have achieved equivalent and possess CPD evidence of practicing to L&D11 Standard.

AND

Demonstrate an understanding of the assessment process for the qualification(s) and unit(s) they will be internally verifying

2.2.3 IV Continuing Professional Development

The occupational experience of IVs must be updated on a regular basis and be periodically reconfirmed via continuing professional development (CPD) via the assessment centres and quality assured by the Awarding Organisation.

It is the responsibility of each IV to identify and make use of opportunities for CPD, such as industry conferences, access to trade journals, and SSO and Professional Body/Trade Association events, at least twice annually to enhance and upgrade their professional development and technical knowledge.

It is imperative that current records are kept of all such CPD opportunities/occasions.

2.2.4

Other IV qualifications may be accepted provided that the qualification can be shown to cover L&D11as above.

For the purposes of quality assurance in centres, other IV qualifications which have been accredited by Ofqual may be accepted where the qualifications are based on the above Learning and Development NOS. These must be endorsed by SummitSkills and the Awarding Organisation(s).

2.3 External Verifiers (EV)

2.3.1 EV Role and Competence

External Verifiers must;

- Be accountable to the Awarding Organisation
- Have achieved Learning and Development Unit 12 (L&D12) – External Monitor and Maintain the Quality of Workplace Assessment (replaces V2 and D35) or have achieved equivalent
- Possess CPD evidence of practicing to L&D12
- Demonstrate an understanding of the assessment process
- Have no connections with the assessment centre, which may constitute a conflict of interest, in order to maintain objectivity
- Have verifiable relevant sector competence. This verifiable evidence must be **at or above the level being audited** and include one or more of a relevant occupational qualification (Examples are listed in section 2.5 of this Annex) or be registered with the appropriate industry registration body at the relevant occupational level and grade.
- Have sufficient and relevant technical/occupational understanding in the qualification(s)/unit(s) being verified
- Be fully conversant with the standards and performance criteria in the units to be assessed.
- Be able to provide centres with advice and guidance on assessment and internal verification procedures

2.3.2 EV Continuing Professional Development

The occupational competence of EVs must be updated on a regular basis and be periodically reconfirmed via continuing professional development (CPD) and recorded by the assessment centres and quality assured by the Awarding Organisation.

It is the responsibility of each EV to identify and make use of opportunities for CPD, such as industry conferences, access to trade journals, and SSO and Professional Body/Trade Association events, at least twice annually to enhance and upgrade their professional development and technical knowledge.

It is imperative that records are kept of all such CPD opportunities/occasions and that they provide evidence of cascading such technical knowledge and industry intelligence to all relevant colleagues.

2.4 Expert Witnesses

Where “**Expert Witnesses**” are used in the assessment process identified above they must be;

- Sector competent individuals who can attest to the learner's performance in the workplace.
- It is not necessary for expert witnesses to hold an assessor qualification, as a qualified assessor must assess the performance evidence provided by an expert witness.
- Evidence from expert witnesses must meet the tests of validity, reliability, authenticity and sufficiency.
- Expert witnesses will need to demonstrate: -
 1. They have relevant current knowledge of industry working practices and techniques
 2. That they have no conflict of interest in the outcome of their evidence
 3. They understand the unit(s) and qualification(s) for which they are providing evidence

2.5 Attesting to Occupational Competence for Assessors, IVs and EVs

This Assessment Strategy explains that Assessors, Internal Verifiers and External Verifiers must either be able to demonstrate that they are registered and up-to-date with their registration with an appropriate approved industry registration body **or** have one or more of a relevant occupational qualification to ensure that they can be regarded as occupationally competent in terms of assessing or verifying the relevant qualifications, and units therein, identified in Annex 1.

NOTE

- **The suitability or otherwise of individual assessors, IVs and EVs for Electrical installation and for Domestic Plumbing & Heating is determined solely and exclusively by the Scottish Joint Industry Board (SJIB). This does not include the HVACR industries which have separate arrangements.**
- Assessors and verifiers who have relevant qualifications which are not competence-based must provide verifiable evidence that they are occupationally competent. This evidence must demonstrate that the

assessor/verifier has up-to-date knowledge of the industry/occupation (for which the assessment is taking place), its settings, legislative and regulatory requirements, codes of practice and guidance

Annex 3 - Industry arrangements for the “Assessment of Occupational Competence”

The “Assessment of Occupational Competence” is an independent part of the assessment process. Each industry will have its own arrangements which will be compliant with the following requirements.

Details of these assessments will be based on “Industry Recommendations” relating to Key Safety-Critical Aspects as outlined in Section 4 and will be arranged and agreed between the Awarding Organisation for the relevant components of the SVQ and the particular industry/occupation using those qualifications. Each Awarding Organisation shall also apply the principles specified in Annex 4 of this strategy, thus ensuring a nationally consistent approach of “Assessment of Occupational Competence” for the industry/occupation concerned.

The design, resource implications, administration and quality assurance requirements for each “Assessment of Occupational Competence” will be determined and agreed by SummitSkills, the industry and the Awarding Organisations in order that there is no disadvantage to the candidate or detriment to the industry in terms of individuals being able to demonstrate “occupational competence”.

Any of the above should be cost effective and imply no additional unreasonable burden or expenditure for Awarding Organisations.

Further information is provided in Annex 5.

Annex 4 – Arrangements between organisations providing the facilities for the “Assessment of Occupational Competence” and Awarding Organisations

1. Introduction

- 1.1 The “Assessment of Occupational Competence” is a part of the assessment process/requirements for the qualification structures identified in this assessment strategy (Annex 1), it is an independent activity or activities which are conducted as part of the assessment process to confirm occupational competence.
- 1.2 Each industry will have its own requirements which are compatible to and reflect their particular necessities in terms of assessing occupational competence (Annex 3) in an “independent structure”. These arrangements and the assessment methodology will be agreed between SummitSkills in partnership with industry representatives and Awarding Organisations accordingly.
- 1.3 The **Heating & Ventilating, Refrigeration & Air Conditioning** industries will maximise the facilities in approved delivery/assessment centres that will provide an independent, controlled and designated assessment environment within its learning and assessment resource for the purpose of the “Assessment of Occupational Competence” for the identified qualification in question.
- 1.4 The **Domestic Plumbing and Heating** industry will maximise the facilities in approved delivery/assessment centres that will provide an independent, controlled and designated assessment environment within its learning and assessment resource for the purpose of the “Assessment of Occupational Competence” for the identified qualification in question.
- 1.5 The **Electrical Installation** industry will use an industry prescribed “Assessment of Occupational Competence” facilitated by organisations approved, in Scotland, by Scottish Joint Industry Board (SJIB)¹.

NOTE 1: SJIB was founded in 1969 by SELECT and Unite the Union. The SJIB portfolio includes the intellectual copyright for the Final Integrated Competence Assessment (FICA) for the BES industries in Scotland. Therefore the SJIB has the responsibility and accountability for the quality and rigour of the industry’s “Assessment of Occupational Competence” in terms of provision, facilities, health & safety, marking regime and assessment methodology and quality assurance

2. Purpose

- 2.1 The purpose of these Arrangements is to define the roles and responsibilities of the organisations and bodies involved with facilitating, managing and administering the “Assessment of Occupational Competence” for each industry.
- 2.2 These Arrangements only relate to the qualifications identified in Annex 1 of this assessment strategy or their revisions/replacements as determined by SummitSkills.

3. Roles and Responsibilities

3.1 Electrical Installation, Domestic Plumbing and Heating

- 3.1.1 The “Assessment of Occupational Competence” requirements will be determined by SummitSkills in partnership with industry representatives and Awarding Organisations
- 3.1.2 The “Assessment of Occupational Competence” venues and facilities will be provided by Awarding Organisation approved centres and comply with the requirements identified in 3.1.1
- 3.1.3 Awarding Organisation Internal Verifiers (IVs) and External Verifiers (EVs) will be responsible for quality assuring the “Assessment of Occupational Competence” venues and facilities in accordance with the Awarding Organisation’s compliance requirements

3.2 Electrical Installation:

For the purpose of these Arrangements organisations approved to provide the “Electrotechnical Assessment of Occupational Competence” will be referred to as “EAOC Centres”

- 3.2.1 The “Electrotechnical Assessment of Occupational Competence” requirements will be determined and prescribed by the SJIB

- 3.2.2 The “Electrotechnical Assessment of Occupational Competence” facilities will be provided by “EAOOC Centres” approved by the SJIB in accordance with the SJIB industry endorsed Centre Approval Specification
- 3.2.3 The SJIB will be responsible for quality assuring the rigour and assessment methodology associated with the “Electrotechnical Assessment of Occupational Competence” facilities and assessment requirements in accordance with the SJIB industry endorsed “EAOOC Centres” Approval Specification
- 3.2.5 The SJIB will provide Awarding Organisation EVs summaries of the annual monitoring visit criteria, procedures and reports, as appropriate, for “EAOOC Centres” who are approved to provide the “Electrotechnical Assessment of Occupational Competence” facility
- 3.2.6 The SJIB will provide Awarding Organisation IVs and EVs, as appropriate, a summary of the principles of the “Electrotechnical Assessment of Occupational Competence” marking regime and criteria in terms of its integrity, robustness and consistency”
- 3.2.7 The SJIB will work in partnership, as appropriate, with Awarding Organisations to address any candidate grievances related to the “Electrotechnical Assessment of Occupational Competence”
- 3.2.8 SummitSkills and the SJIB will be responsible for the maintenance of the “Electrotechnical Assessment of Occupational Competence” component of the SVQ

3.3 Domestic Plumbing & Heating

- 3.3.1 The “Assessment of Occupational Competence” requirements will be determined by SummitSkills in partnership with industry representatives and Awarding Organisations.
- 3.3.2 The “Assessment of Occupational Competence” facilities will be provided by Awarding Organisations’ approved centres and comply with the requirements of SummitSkills in partnership with industry representatives and Awarding Organisations
- 3.3.3 Awarding Organisation Internal Verifiers (IVs) and External Verifiers (EVs) will be responsible for quality assuring all aspects of the “Assessment of Occupational Competence” in accordance with the Awarding Organisations’ compliance requirements.

3.4 HVACR

- 3.4.1 The “Assessment of Occupational Competence” requirements will be determined by SummitSkills in partnership with industry representatives and Awarding Organisations.
- 3.4.2 The “Assessment of Occupational Competence” facilities will be provided by Awarding Organisations’ approved centres and comply with the requirements of SummitSkills in partnership with industry representatives and Awarding Organisations as identified in 3.4.1
- 3.4.3 Awarding Organisation Internal Verifiers (IVs) and External Verifiers (EVs) will be responsible for quality assuring all aspects of the “Assessment of Occupational Competence” in accordance with the Awarding Organisations’ compliance requirements.

4. Currency of these Arrangements

It is expected that the currency of these Arrangements will match with the accreditation period of the qualifications, or units therein as relevant, as identified in Annex 1. SummitSkills, in partnership with the Awarding Organisations and any relevant approval organisation(s) associated with these Arrangements will review the Arrangements bi-annually or as appropriate subject to any revisions to the qualifications identified in Annex 1.

Annex 5 – Exemptions for Electrical Installation, Plumbing and Heating, and HVACR

This section is provided to centres, assessors and other stakeholders and captures exemptions that apply to the SVQ3 Electrical Installation at SCQF Level 7. In particular it defines those areas of the SVQ (which is based on NOS) that do not apply to Scotland and hence should form no part of the training delivery or of the assessment. Note that these 'deviations' from the SVQ form part of the 'range' related to specific performance and knowledge and understanding criteria. These will have no negative impact on candidate achievement and/or full SVQ certification.

5.1 Electrical Installation

a. Exemptions – range items that do not apply to Scotland for the SVQ3 Electrical Installation @SCQF Level 7

NOS	Title	Area	Ref
SUMET05	Install and connect electrical cables, conductors, wiring systems and equipment.	Range related to performance criteria.	1.9, 2.13 & 2.14
		Range related to knowledge and understanding.	1.9, 2.13 & 2.14.
SUMET06	Inspect and test electrical systems and equipment.	Range related to performance criteria.	4.9, 5.13 & 5.14.
		Range related to knowledge and understanding.	4.9, 5.13 & 5.14.
SUMET07	Commission electrical systems and equipment.	Range related to performance criteria.	2.13 & 2.14.
		Range related to knowledge and understanding.	2.13 & 2.14.
SUMET08	Identify and rectify faults in electrical systems and equipment.	Range related to performance criteria.	3.9, 4.13 & 4.14.
		Range related to knowledge and understanding.	3.9, 4.13 & 4.14.
SUMET09	Maintain electrical systems and equipment.	Range related to performance criteria.	3.9, 4.13 & 4.14.
		Range related to knowledge and understanding.	3.9, 4.13 & 4.14.

b. Additions – areas not covered by the NOS but are needed for Scotland

None

c. Final Integrated Competence Assessment (FICA) – specific guidance

The modern apprenticeship (MA) in Electrical Installation comprises three elements, the Electrical Installation course programme (6 units), the SVQ3 Electrical Installation at SCQF Level 7, and the final integrated competence assessment (FICA) which forms part of the SVQ structure. Completion of the full SVQ and subsequent MA can only be met when all six units are complete and thereafter the FICA is passed, and only when these elements are part of the SJIB Apprenticeship, SJIB Adult Training Scheme or SJIB Crediting Electrotechnical Competence (CEC) Scheme.

d. Other – any critical guidance not covered above

None

5.2 Plumbing & Heating

a. Exemptions – NOS details that do not apply to Scotland

Although referred to in the National Occupational Standards no references are made to pre-1919 properties (Historic Scotland listed building properties). Energy efficiency is delivered throughout the qualification and is embedded in the environmental and central heating units in relation to a property circa 1950. Research into different age properties is a requirement for learners and continues into heating design with differing 'U' values providing awareness of the industry standards for building materials.

b. Additions – areas not covered by the NOS but are needed for Scotland

None

c. Final Competence Assessment (FCA)– specific guidance

The term Final Competence Assessment (FCA) specifically relates to a means of assessment of the safety critical aspects for the SVQ. It is an independent holistic assessment of the SVQ candidate's occupational competence (skills and knowledge) via an assessment process as required by the industry and approved by the Awarding Body. This final assessment is a mandatory requirement for the achievement of the full qualification.

Evidence of a candidate's involvement, relevant experience and progressive competence development in the identified safety-critical and technically critical aspects of the qualification must be provided before the FCA.

Competence of these safety critical aspects must be assessed via simulated conditions.

- activities relating to limited scope electrical work
- as relevant, the installation, connection and servicing/maintenance of fuel systems and equipment — gas; oil; solid fuel
- as relevant, the installation, connection and servicing/maintenance of hot/cold water systems and equipment, unvented water
- backflow prevention

It must be independent from the normal teaching and learning programme of the candidate although the same facilities equipment and materials used in training can be utilised for the formal assessment. There is no requirement for an independent assessor to carry out final competence assessment, although it would be seen as good practice to use an assessor who has not been involved in the training of the candidate where time and staff resources within the centre permit this.

As holistic an approach as possible is to be encouraged towards final competence assessment. Due to the large range of the safety critical points it is permissible to use a series of FCAs, scheduled at appropriate points throughout the programme, to gather evidence of the relevant safety critical aspects the candidate is being assessed on. Any FCA should be undertaken at a point that suits both centre delivery and the readiness of the candidate to undertake such an assessment. Evidence of all key safety critical aspects relevant to the SVQ must be gathered under simulated conditions in a realistic work environment and made available for external verification.

d. Other – any critical guidance not covered above

- **Working Environment** - Relates to light commercial, Domestic, Agricultural, Horticultural, Leisure and entertainment, Residential medical and care facilities and Public service establishments. The SVQ Level 3 qualification is for the Domestic Plumber and in some cases certain types of work would not be undertaken in some of the above. Work would be undertaken in the domestic part in the above but further training would be required in some of the specialist areas.
- **Limited Scope Electrical Work** – Candidates must be assessed under a 3:1 ratio of candidates to assessor for limited scope electrical work associated with plumbing.

COURSE PROGRAMME UNITS

In meeting the requirements of the 9 NOS Units which comprise the Level 3 SVQ Award in Domestic Plumbing & Heating the contents of the undernoted course programme units must be delivered in full to candidates;

- Unit 1 (Apply Health & Safety Legislation and Working Practices (Mechanical Services)
- Unit 2 Apply Environmental Legislation, Working Practices & Principles (Mechanical Services)
- Unit 3 Maintain Working Relationships & Oversea Work Activities
- Unit 4 Install & Commission Hot & Cold Water Systems
- Unit 5 Install & Commission Central Heating Systems
- Unit 6 Carry Out Work On Electrical Systems for the Control (and supply) of Mechanical Services (Limited Scope)
- Unit 7 Install Above Ground Drainage Systems
- Unit 8 Fuels, Ventilation and Combustion
- Unit 9 Working Principles, Installation Options, Regulatory Requirements, for Micro-Renewable Technologies, Rainwater Harvesting and Recycling Technologies.
- Unit 10 Install Sheet Weathering Systems

FUEL OPTIONS TO COMPLETE SVQ LEVEL 3 IN PLUMBING AND HEATING

Candidates undertaking the Level 3 SVQ Award in Domestic Plumbing & Heating MUST select one of the four optional fuel units:

- Install and Commission Fuel Systems; Gas (ACS)
- Install and Commission Fuel Systems; Oil
- Install and Commission Fuel Systems; Solid Fuel
- Install and Commission Fuel Systems; Emergent Technologies

Competence in a fuel option must meet the minimum standards laid down by the appropriate body i.e. Gas Safe (Gas), OFTEC (Oil), HETAS (Solid Fuel) and MCS (Emergent Technologies) and for an SVQ candidate on achievement of the full SVQ result in separate operative registration/recognition with the appropriate body. This in normal course will require a candidate as part of their SVQ to undertake bespoke training leading to an assessment in order to meet the requirements of the appropriate registration/certification/industry body.

The requirements of the National Occupational Standards (NOS) for the above options are covered under the content of undernoted NOS units at SCQF Level 7:

- SUMPH 04 – Install & Test Domestic Plumbing & Heating Systems
- SUMPH 05 – Service and Maintain Domestic Plumbing & Heating Systems
- SUMPH 06 – Inspect & Commission Domestic Plumbing & Heating Systems
- SUMPH 07 – Commission Domestic Plumbing & Heating Systems
- SUMPH 08 – De-commission Domestic Plumbing & Heating Systems

In addition candidates prior to undertaking one of the four fuel options and as a foundation must receive teaching and training from a specific Fuels, Ventilation and Combustion Unit mapped to the NOS (SUMPH 04, SUMPH 05, SUMPH 06) and SUMPH 07 in order to give the learner an appreciation of the different fuels, ventilation and combustion requirements.

Centres must use Awarding Body/Industry approved training materials for the selected option prior to successful completion of the recognised Fuel Body External Assessment leading to registration with either Gas Safe Register (ACS), OFTEC (OIL), HETAS (Solid Fuel and MCS (Emergent Technologies).

5.3 HVACR

a. Exemptions – NOS details that do not apply to Scotland

None

b. Additions – areas not covered by the NOS but are needed for Scotland

None

c. Final Competence Assessment (FCA)– specific guidance

The term Final Competence Assessment (FCA) specifically relates to a means of assessment of the safety critical aspects for the SVQ. It is an independent holistic assessment of the SVQ candidate's occupational competence (skills and knowledge) via an assessment process as required by the industry and approved by the Awarding Body. This final assessment is a mandatory requirement for the achievement of the full qualification.

Evidence of a candidate's involvement, relevant experience and progressive competence development in the identified safety-critical and technically critical aspects of the qualification must be provided before the FCA.

Please note: The key safety aspects of the SVQ 3 Heating and Ventilating: Ductwork Planning and Installation at SCQF Level 6 may be assessed via simulated conditions . In this SVQ it has been decided that an FCA is not considered the most appropriate method of assessment and the actual assessment of these elements is integrated into the body of the award and are as specified in the NOS for this sector. Where a candidate has not produced site evidence to meet the criteria centres may confirm the competency of the candidate through the use of simulation. The simulated set up must be verified by the appropriate EV to ensure all standards and criteria are met.

Competence of these safety critical aspects must be assessed via simulated conditions.

(Heating and Ventilation, Ductwork)

- As relevant installation, connection and testing within a range of appropriate industrial and commercial heating systems
- Activities related to limited scope electrical work
- As relevant, the installation, connection and servicing/maintenance of fuel systems and equipment – gas; oil; solid fuel
- As relevant, the installation, connection and servicing/maintenance of hot/cold water systems and equipment – unvented water; backflow prevention
- As relevant, the installation, connection and service/maintenance of ductwork systems and equipment

(Refrigeration and Air Conditioning)

- Activities relating to F Gas installations/service and maintenance
- Activities relating to limited scope electrical work
- Thermal pipe joining methods – welding; brazing; soldering activities
- Pressure testing
- Handling of refrigerants (ODS, Ammonia, HC and CO2)

(Service and Maintenance)

- Activities related to the decommissioning and re-commissioning of appropriate commercial heating systems
- As relevant the installation connection and servicing /maintenance of fuel systems and equipment
- As relevant the connection and servicing/maintenance of hot and cold water systems and components
- Activities related to the service and maintenance of air conditioning systems
- Activities related to the service and maintenance of building services controls system

These must be independent from the normal teaching and learning programme of the candidate although the same facilities equipment and materials used in training can be utilised for the formal assessment. There is no requirement for an independent assessor to carry out final competence assessment, although it would be seen as good practice to use an assessor who has not been involved in the training of the candidate where time and staff resources within the centre permit this.

As holistic an approach as possible is to be encouraged towards final competence assessment. Due to the large range of the safety critical points it is permissible to use a series of FCAs, scheduled at appropriate points throughout the programme, to gather evidence of the relevant safety critical aspects the candidate is being assessed on. Any FCA should be undertaken at a point that suits both centre delivery and the readiness of the candidate to undertake such an assessment. Evidence of all key safety critical aspects relevant to the SVQ must be gathered under simulated conditions in a realistic work environment and made available for external verification.

d. Other – any critical guidance not covered above

None