

MANAGING COMPETENCE FOR INDUSTRIAL AND COMMERCIAL DUCTWORK INSTALLATION ACTIVITIES

Industry Competence Steering Group

Sector Led Group 10 - Installation & Maintenance (10.2 Engineering Services)

Ductwork Installer Competence Group (DICG)

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Executive summary

In the wake of the Grenfell Tower fire, a comprehensive review of building regulations and legislation was carried out to deliver the recommendations made in Dame Judith Hackitt's report 'Building a Safety Future'. This triggered change in both primary and secondary legislation which further embedded the requirement for demonstration of individual competence and organisational capability for those carrying out work in the built environment. The Industry Competence Steering Group, a formal sub-committee of the Building Safety Regulator's statutory Industry Competence committee, is tasked with supporting employers to define and address approaches to demonstrating competence within their areas.

Within this structure, the Ductwork Installer Competence Group (DICG) was formed to lead the development and implementation of individual competence frameworks related to ductwork installation (installation of industrial and commercial ventilation, fume extract, fire resisting and smoke control ductwork, fire and smoke dampers, and associated components).

This document sets out an intended future state for individual competence for those carrying out ductwork installation activities, intended to apply throughout the UK. Following a period of consultation, finalised documentation will be approved through the Building Services Engineering Skills Partnership Committee signalling formal adoption by industry. Subsequent implementation activities will then be led by the relevant skills body.

DICG has discussed existing challenges in defining and measuring competence, highlighting key recommendations for improvement. These include creating coherent and consolidated routes to competence, ensuring consistency of training and assessment, and increasing the granularity registration.

A functional map and framework of competencies has been set out to create a benchmark for competence in ductwork installation. This breaks down the work conducted into discrete activities and sets standards for these in terms of skills, knowledge, experience & behaviour, in line with the requirements of BS 8670-1. That statements are also mapped back to other relevant standards and frameworks, such as the WG12 whitepaper on construction products competence and the BSE Skills NOS. Only those activities marked as phase 1 within the functional map are addressed in this document. A further stage of work will be required to set standards for phase 2 activities which provide extension of baseline installer competence, including work coordination, commissioning and decommissioning, and multiskilling at crucial trade junctions.

Proposed routes to competence, including evidence requirements for both initial demonstration and validation, and demonstration of currency of competence and revalidation have been set out. This includes routes for new entrant, job mover, unqualified experienced worker, and qualified experienced worker. These are based around achievement of relevant qualifications and ongoing evidencing of experience and behaviour in line with the framework of competencies.

It is acknowledged that additional activity will be required in order to move towards this future state, and sets out an outline implementation plan. Proposed actions include creating specifications for training and assessment to drive consistency of provision, reviewing qualification structures to ensure the explicit incorporation of fire and smoke dampers, and retiring standards and qualification units which are not currently aligned with the broader picture of building services engineering.

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i Introduction

i.1 Drivers for change

In 2017, the Grenfell Tower fire created shockwaves throughout the built environment sector and generated a great deal of focus on deficiencies in both construction practices and the capability of the construction workforce.

It was recognised in the report of Dame Judith Hackitt, 'Building a Safer Future: Independent Review of Building Regulations and Fire Safety'¹ (also known as the Hackitt Report) that a simple, more effective regulatory framework would be required to deliver change. This included moving to an 'outcomes-based' model, rather than a prescriptive rules-based model reliant on complex and detailed guidance. To achieve this, competent people who are capable of understanding their responsibilities for safety & integrity and thinking for themselves are required alongside capable organisations which put individuals in a position where they can act competently.

The Building Safety Act 2022 (the Act) has introduced a new regulatory regime which puts a legal requirement to demonstrate competence front and centre, to directly address this issue. The Act, together with supporting secondary legislation sets a general requirement for competence at both individual and organisational levels:

- Individual competence – Any person carrying building or design work must possess the skills, knowledge, experience and behaviours (SKEB) necessary
- Organisational capability – Organisations must have the organisational capability to perform their functions. Organisational capability is defined within Building Regulations as having the appropriate management, policies, procedures, systems and resources in place to ensure that individuals under the control of the organisation comply with relevant regulations and that those in development are appropriately supervised

i.2 Organisational capability and individual competence

Correct installation and maintenance of ductwork and associated products is critical to ensuring correct function of ventilation systems and maintenance of compartmentation in case of fire. This is a key component of ensuring building safety. As such, setting out standards for competence in this area is essential.

The definition of ductwork installation used within this document can be found in section 1.1.

Organisational capability is currently measured through various third-party certification schemes, or through trade body membership. Third-party schemes are commonly employed by larger companies and are not mandated. Smaller contractors would typically make use of trade body schemes such as BESA's contractor membership scheme which audits and provides oversight of organisational processes. Requirements in this area are currently being strengthened and will build on emerging requirements for individual competence.

The work described within this report has focussed on defining an approach to individual competence which can be connected to wider organisational capability. This has been aligned

¹ Building a Safer Future. Independent Review of Building Regulations and Fire Safety: Final report. Dame Judith Hackitt DBE FREng. Published May 2018. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/707785/Building_a_Safer_Future_-_web.pdf

with the requirements set out in BS 8670-1:2024, the code of practice for competence frameworks for building safety – core criteria².

i.3 Addressing individual competence

The Industry Competence Steering Group (ICSG) is a formal, cross-sector working group of the Industry Competence Committee (ICC), a statutory committee of the Building Safety Regulator (BSR). ICSG provides a vehicle for industry collaboration in development and implementation of competence frameworks in the built environment.

ICSG is made up of multiple sector led groups (SLGs), each leading work in a specific area. Within this, SLG 10 is focussed on competence frameworks for installation and maintenance. The structure of SLG 10 is split into 5 super sectors, each focussed on different aspects of the installer landscape. SLG 10.2 covers roles and activities associated with engineering services, including ductwork installation.

In addition, SLG 12 is representing the wider picture of passive fire protection. As such, SLG 12 also has an interest in supporting work on competence in ductwork installation, particularly around fire resisting and smoke control products and systems.

i.4 The Ductwork Installation Competence Group (DICG)

The DICG was formed to take forward the development of a sector-based approach to competence on behalf of SLG 10, linking into the wider work of SLG 12. It is formed from industry specialists and employer / sector body representatives in line with the principles underpinning the work of ICSG.

The following organisations have contributed to the work of DICG and been instrumental in the production of this document:

- Association of Ductwork Contractors and Allied Services (ADCAS)
- Advanced Air (UK) Ltd.
- Association for Specialist Fire Protection (ASFP)
- BSB Engineering Services Ltd.
- Building Engineering Services Association (BESA)
- Construction Industry Training Board (CITB)
- Ductwork By Design Ltd.
- Engineering and Building Services Skills Authority (EBSSA)
- Firesafe Fire Rated Ductwork Ltd.
- Fire Protection Ltd.
- Gilberts (Blackpool) Ltd.
- Hotchkiss Limited
- Incendin
- Mandik UK Limited
- PMCSTECH CONSULT Ltd.
- RDS Projects
- Swegon Air Management Ltd.
- Thermal Insulation Contractors Association (TICA)
- TROX UK Ltd.
- Ventilation Fire Smoke Ltd.
- Vent-Tech Ltd.

DICG would also like to thank Milford & Marah Ltd. for facilitating this work.

At every stage, the DICG has endeavoured to consult with or include the work of other relevant bodies or working groups to ensure a joined-up approach to competence with allied sectors.

² BS 8670-1:2024 TC. Competence frameworks for building safety – Core criteria. Code of practice. BSI. Published 31 May 2024. Available from: <https://knowledge.bsigroup.com/products/competence-frameworks-for-building-safety-core-criteria-code-of-practice>

Work will continue to identify interfaces with other trades and create routes for horizontal progression between trades or multiskilling.

i.5 The structure of this document

This document has been created to set out an intended 'future state' for individual competence for those installing ductwork, dampers and related components (in accordance with the definition in section 1.1). This is set out in five sections:

Section 1 – Scope

This section provides information on the applicability of this document. This includes the purpose and scope of the work carried out in terms of occupation, building types and geographical area.

Section 2 – Background & context

The section provides contextual information around current competence arrangements within ductwork installation, including strengths, weaknesses, challenges and opportunities, which has informed the development of subsequent sections. Throughout this section, recommendations for improvement have been embedded, which are reflected in the proposed framework, standard for competence and/or implementation plan. These recommendations are summarised in Appendix 1 – Consolidated list of recommendations.

Section 3 – Functional map and framework of competencies

This section sets out the activities carried out within the agreed scope of ductwork installation, and the benchmark for competence within them in terms of skills, knowledge, experience, and behaviour (SKEB).

Section 4 – Standard for competence

This section includes details of how competence can be validated and revalidated against that standard to ensure both initial competence and currency of competence.

Section 5 – Implementing the standard

This section sets out expected actions required to turn the future state into a reality, including revision of standards and associated qualifications, and actions to ensure consistency across the training and assessment landscape.

i.6 The consultation and adoption process

This document is intended to provide a mechanism for consultation with the wider sector. Following closure of the consultation all comments will be reviewed by DICG and, where required, amendments may be made to the functional map and framework of competencies, the standard for competence, and/or the implementation plan.

Final proposals post-consultation will be submitted to the Skills Partnership Committee for adoption and publication through its formal processes. Following approval, implementation will be continued by BESA (the relevant skills body) in collaboration with DICG and other stakeholders, including awarding organisations, and training & assessment providers as appropriate.

1 Scope

1.1 Occupational area

The following definition has been used to underpin the developments outlined in this document:

Installation of industrial and commercial ventilation, fume extract, fire resisting and smoke control ducts (or any of these) with the related installation of fire dampers, intumescent dampers (non-mechanical fire barriers), and smoke control dampers. This includes verifying the function of all types of dampers as per design and operation, and installation of associated equipment such as fans, attenuators and support structures. Scope excludes installation of controls and commissioning of whole installed systems.

1.2 Purpose

The purpose of this work is to set out an industry approach to developing, measuring, and validating the competence of those undertaking ductwork installation activities against the scope set out in section 1.1. This will ensure that defined arrangements are in place by which competence of ductwork installers can be objectively measured and confirmed, increasing safety.

This document and its underpinning details are designed for use for a variety of purposes, including:

- Development of industry wide tools for measuring and validating competence
- Development of organisational approaches to evidencing workforce competence
- Alignment and/or recognition of existing training, assessment, qualifications
- Development of new training, assessment, qualifications, and occupational standards
- Strengthening arrangements for organisational capability through third party certification schemes

No specific sector-based legal requirements for validation or revalidation of competence in ductwork installation currently exist, however the Building Safety Act (2022) and associated legislation place an onus on individuals and employers to prove competence to work in critical activities in construction and the built environment.

1.3 Occupational relevance

This approach to competence has been designed for those carrying out installation activities as set out in the definition in section 1.1. This includes activities which may apply to those with the following role titles (this list is not exhaustive):

- Ductwork installer
- Ductwork & damper installer
- Fire resistant ductwork installer

A second phase of work will be required to focus on activities which extend the scope of installer competence as progression towards supervisory roles and allow multitasking in other trade areas. This includes activities around:

- Installer progression

- Work coordination
- Commissioning & decommissioning of systems
- Penetration sealing
- Fire resisting insulation

Consultation will be required with other framework owners to facilitate this, including but not necessarily limited to thermal insulation (TICA) and firestopping (ASFP).

1.4 Limitations and exclusions

The design and specification of ductwork is specifically excluded, as design responsibility does not sit with those individuals carrying out installation activities.

This document is specific to ductwork and damper installation as defined in section 1.1. Installation of other heating, ventilation and air conditioning (HVAC) components, products and systems is not included. Scope also excludes installation of controls and commissioning of whole installed systems.

1.5 Building types

The requirements set out in this document apply equally to those installing ductwork in higher-risk buildings (HRBs) and other building types.

Although design and specification of firestopping for HRBs may differ from that required for non-HRBs, the installation of the ductwork selected is dependent on the specification not the building type in and of itself. As a result, it is expected that the competence requirements set out here would apply regardless of the type of building being worked on.

1.6 Geographical scope

The proposals set out have been designed to apply to the whole of the UK to create a consistent standard for competence. Further discussion with bodies in devolved nations may be required to implement these proposals outside England.

2 Background & context

2.1 Activity based competence

The work carried out by 'ductwork installers' is diverse, extending from installation of general ventilation, fire resisting and smoke control ductwork, through installation of varying types of dampers, including mechanical and non-mechanical dampers and smoke control dampers. Each of these will have distinct installation requirements. The exact combination of these on which a specific installer will undertake work will depend on their employer's scope of work and the types of projects that they secure. The role of each installer will therefore differ from individual to individual and organisation to organisation. The scope of each role may also change over time as the mix of work undertaken expands or contracts. This makes a single occupational definition of a ductwork installer (and by extension a single, linear route to competence) challenging.

It is, however, acknowledged that individuals will initially begin in industry by carrying out general ventilation work before progressing to more complex work with fire and smoke control products.

An activity-based definition of competence will help to account for this complexity. This allows statements for skills, knowledge, experience, and behaviour (SKEB) to be defined per activity undertaken. Installers (in conjunction with their employers) are then able to choose the activities that are relevant to their work, in addition to core activities completed by all installers, and ensure that they meet the competence requirements for those activities. This will prevent barriers to demonstration of competence from being created through introduction of requirements which cannot be met by all installers.

Recommendation 1: An activity based approach should be used when defining required standards of competence

2.2 Occupational standards

National Occupational Standards (NOS) are the only existing descriptions of competence for the sector (apprenticeship occupational standards in England were withdrawn due to low uptake). Already consulted upon and adopted by industry and underpinning relevant qualifications, these provide an existing foundation for development of broader competence standards.

Recommendation 2: NOS should form a basis for development of competence standards in this area

Although the NOS reflect skills and knowledge, requirements for experience and behaviour have not been fully articulated. There are also areas of identified weakness in the standards, particularly around fire safety / compartmentation and use of construction products. Addition of further statements in the competence standards in these areas will therefore be required in order to support industry in discharging their legislative and regulatory responsibilities. Integrating NOS into wider competence standards set by industry will maintain alignment between qualifications systems and wider legal or best practice requirements.

Concerns around the level of detail included in the NOS have also been identified which may result in inconsistent interpretation in resulting qualifications and assessment programmes. Some clarification detail may therefore be required in the competence standards which does not appear in the NOS.

Recommendation 3: Competence standards should build on the NOS to ensure full coverage of SKEB requirements in relevant activities

Whilst NOS relating to fire and smoke control dampers were developed in 2023, and those underpinning the level 3 (SCQF level 6) qualification provision were reviewed in 2024/25, those only underpinning the level 2 (SCQF level 5) (SUMMES07 – 09) have not been reviewed since 2008. These would bear further examination to ensure that they remain fit for purpose for industry.

Recommendation 4: NOS underpinning the level 2 (SCQF level 5) SVQ (SUMMES07 – 09) should be reviewed and any identified amendments incorporated into the competence standard

The full scope of ductwork extends across the footprint of two Standards Setting Bodies (SSBs) – BSE Skills and CITB. Although BSE Skills is responsible for the majority of ductwork and damper installation NOS, CITB holds a specific standard for installation of fire resisting ductwork (COSVR352) in its passive fire protection suite. This has prompted concerns that a less robust route, not aligned to the requirements of the building services engineering sector, exists which does not incorporate the full requirements for ductwork installers. Removing this pathway would ensure alignment of all qualifications with the requirement of the building services engineering sector

Recommendation 5: The installation of fire resistant ductwork NOS (COSVR352) should be retired from the passive fire protection suite owned by CITB

2.3 Existing qualifications and assessment programmes

Multiple vocational qualifications, overseen by differing sector bodies and awarding organisations, are available with varying value in determining competence of ductwork installers.

- SVQ 2 in Heating and Ventilating: Ductwork Installation (SCQF level 5) – this confirms baseline skills and knowledge against relevant NOS³ and implicitly covers fire resisting ductwork and dampers in addition to general ventilation ductwork
- Level 2 NVQ Diploma in Associated Industrial Services Occupations – Passive Fire Protection – this explicitly relates to fire resisting ductwork only and is offered by multiple awarding organisations

The SVQ is rooted in building services engineering, with core units reflecting standards from that area. Conversely, core health and safety units within the passive fire protection NVQ differ. This creates a system where two kinds of ductwork installation are covered by two separate qualifications with different core / generic requirements. The passive fire protection qualification provides a more diluted route, where individuals are not required to demonstrate the wider skills and knowledge required for ductwork installation prior to demonstrating specific knowledge and/or skills relevant to fire resisting ductwork. There is concern that this sets a lower standard for ductwork installers coming through that pathway, and its removal is

³ An SVQ in Heating and Ventilating: Ductwork Planning and installation (SCQF level 6) is also available, however this extends beyond baseline installer competence into site coordination, commissioning and decommissioning and, as such, will be considered as part of phase 2 work to look at progression towards supervisory roles. See 2.7.

recommended. CITB has confirmed that, if this pathway is removed, funding can still be maintained for in-scope employers using ventilation qualifications.

Recommendation 6: The fire resisting ductwork installation unit should be removed from the passive fire protection qualification to leave a single, consistent qualification route for learners

Apprenticeships were delivered in England through further education (FE) and the private sector, but these have subsequently been withdrawn due to very low uptake. The Industry is made up of companies of varying size, with a large number of smaller companies which found apprenticeships to be cost prohibitive. Larger contractors reported that the apprenticeship offering did not provide the outcomes they required, and so moved toward internal provision. Resurrecting apprenticeships without concrete evidence of future uptake would be challenging.

Apprenticeships offered in Wales at level 2 / 3 and Scotland at level 3 / SCQF level 6 are based on NOS and predominantly delivered through private provision, with little available through FE infrastructure.

For dampers, no nationally recognised qualifications exist although NOS are available. Integrating damper installation skills and knowledge into the SVQ 2 in Heating and Ventilating: Ductwork Installation (SCQF level 5) would ensure that these activities are covered in an appropriate level of detail and a consistent manner. These have already been incorporated into the ductwork SVQ at level 3.

Recommendation 7: Damper installation, in accordance with the relevant NOS, should be integrated into the L2 qualification

This gap in qualifications around dampers has been met through the use of customised awards. These are provider specific packages of learning and assessment, designed to allow recognition of employer-specific training. In this case, they have been repurposed to create a commercial offer. Customised awards may not be regulated in the same way as nationally recognised qualifications, although awarding organisation specific quality measures are applied. Where non-qualification programmes of assessment represent an alternative route to evidencing skills and knowledge, ensuring they also align to the competence standard (both initially and as time passes) will be important moving forward.

Recommendation 8: The Skills Partnership Committee should approve all products which contribute to evidence of competence and make it clear how these relate to the activities and statements set out within the competence framework

As requirements for skills and knowledge will be revised as the competence standards is developed, bridging assessments may be required to confirm that individuals can evidence against the new framework where they hold an existing qualification

Recommendation 9: Bridging assessments for skills and/or knowledge should be created to allow individuals with existing qualifications to demonstrate that they meet the requirements of the new framework

A lack of consistency between qualifications / assessment providers has also been identified. Group members have highlighted differing views of correct installation and differing interpretations of underpinning knowledge. This is largely driven by the generic nature of NOS. Although this may be partially resolved by adding further clarification to the competence

standard, development of a standard assessment specification to sit alongside the NOS would create more concrete guidance for those offering assessment. Input from assessment providers will be essential to ensure that this guidance is fit for purpose.

Recommendation 10: A standard assessment specification aligned to the competence standard should be created and maintained to drive consistency of assessment between providers

Although these interventions address skills and knowledge, limited assessment of experience and behaviour is made. Recommendations for additional mechanisms for evidencing experience and behaviour should be set out within any identified routes to competence.

Recommendation 11: Mechanisms for evidencing experience and behaviour should be set out within the routes to competence

2.4 Training provision

2.4.1 Industry training

Existing programmes are largely based around on-site assessment with little formal training input. Where individuals do not reach the standard of assessment no formal training is available to refer them to.

Much training takes place in the workplace, within organisations. Although this is successful in some ways, the lack of clear direction for those carrying out training results in differing installer capabilities. Training infrastructure is in place to deliver off-site training to supplement this, but appropriate training methods and content need to be scoped to allow development activities to be put in place. Where this training is offered it needs to be of high-quality and consistent between providers. Input from training providers will be essential to ensure that this guidance is fit for purpose.

Development of a standard training specification would support both employer developed and third-party training to meet the needs of the sector.

Recommendation 12: A standard training specification aligned to the competence standard should be created and maintained to support consistency of training delivery

2.4.2 Basic fire safety awareness training

A key recommendation of CSG's final report⁴ was the development and implementation of basic fire safety training for all installers across the built environment. As a result of this, in consultation with industry, CITB has developed a basic e-learning package to ensure awareness of the basic principles of fire safety. A contextualised version of this is currently in development for the Building Services Engineering sector, which will create broad awareness of fire safety requirements in a sector specific manner. Integrating this into routes to competence for ductwork installers will ensure a basic awareness of fire safety for all whether dealing with general ventilation or fire resisting systems.

⁴ Setting the Bar. The Final Report of the Competence Steering Group for Building a Safer Future. October 2020. Available from: <https://www.cic.org.uk/uploads/files/old/setting-the-bar-9-final-1.pdf>

Recommendation 13: Building services engineering specific basic fire safety awareness training should be incorporated into installer routes to competence

2.4.3 Manufacturers' training

Training on manufacturers' specific products is an important component of familiarising operatives with the materials that they will be using during installation processes. This provides specific instructions for a manufacturer's products, rather than generic skills and knowledge for installation. This goes beyond the requirements for a competence in an activity, building in detailed product-level familiarisation and confidence with manufacturers' specific instructions.

DICG acknowledges the importance of this additional process, and its adoption should be promoted within the industry. However, this is considered a separate process to the validation of competence in the activities identified.

Recommendation 14: Installers should complete appropriate manufacturers' training in the products and / or systems that they are using, alongside demonstrating baseline competence

It is also important that where manufacturers' training is in place it is of good quality and provides a degree of objective evidence that individuals undertaking it have taken on board the specific product or system requirements included. As manufacturers may not be training providers, an outline guide for manufacturers to work to, ensuring some consistency of provision, guidance on minimum inclusions and embedded assessment would help to ensure that employers and individuals can access high-quality provision.

Recommendation 15: Guidance on what constitutes good CPD / manufacturers' training should be developed to support industry

2.5 Capacity and capability for training / qualification / assessment delivery

A lack of qualified assessors is seen as a potential barrier to driving a consistent standard of qualification / assessment within industry. Training and assessment providers in both the private and public sectors struggle to find appropriately qualified and experienced people to deliver, which leads to a knock-on lack of investment in facilities specific to building services engineering learning and assessment programmes. Despite this, there is a wealth of expertise and experience within industry which could be leveraged to expand the trainer and assessor population.

BESA is currently running a campaign called Skills Legacy to encourage experienced workers to qualify in learning and development in order to support ongoing provision. This includes connecting potential trainers and assessors with upskilling qualifications, brokering funding, creating a register of assessors, and connecting those assessors with qualifications providers who need additional support.

2.6 Validation of competence

2.6.1 Initial validation

Initial validation of competence across the full scope of SKEB is not currently made. Additional guidance on how to evidence competence will need to be made available to industry to support individuals and employers in discharging their legislative and regulatory responsibilities.

Recommendation 16: Additional guidance on how to evidence competence should be made available to industry

Card provider registration is currently used as a proxy for validation of competence. This currently relates to skills and knowledge only and is based on qualification achievement and on-going registration with a CSCS card issuer, subject to completion of the relevant health, safety & environment (HS&E) test. This is either with BESA SKILLCard (a CSCS alliance member) or with the CSCS main scheme, depending on which qualification (or in some cases customised award) is undertaken. This creates a system where installers may be reaching different thresholds for competence but still being carded for ductwork activities. Removal of the CITB pathway for fire resisting ductwork will resolve this issue, removing CSCS main scheme registration in this space, and creating a single, consolidated system.

Current registration is occupational and does not provide a granular view of the work that people do, or do not, have the skills and knowledge to undertake. More nuance in the types of ductwork or dampers that someone has relevant skills and knowledge for installing may be needed to round out the picture of competence.

Recommendation 17: Card scheme registration should be made more granular to make it clearer what types of ductwork products or systems someone has the skills / knowledge to install

Additional consideration of how card schemes may be able to support demonstration of competence across the full scope of SKEB should be made. This may provide an additional avenue to support individuals and their employers evidencing that the required competence is in place.

Recommendation 18: BESA SKILLCard should consider how it might support validation / evidencing of competence across the full scope of SKEB

2.6.2 Currency of competence and ongoing validation

Currency of competence is essential to ensure that the workforce is not only capable now but remains capable in the future. A key component of the new competence regime is that competence must be maintained over time and that maintenance should be demonstrated.

Currently, no formal ongoing assessment of competence is made. Card scheme re-registration is based on achievement of the relevant HS&E test, with evidence of occupational competence coming solely from qualification achievement. No continuing demonstration of sector based SKEB is required. No requirements for continuing professional development (CPD) are in place.

Recommendation 19: Routes to competence should consider the threshold(s) for continuing demonstration of competence

Completing formal CPD is not the only mechanism for retaining skills and knowledge. Consideration should be given to how continuing to evidence application of skills and knowledge (experience) plays into currency of competence.

Recommendation 20: Routes to competence should consider all potential mechanisms for ensuring currency of competence, not just formal training and/or assessment

2.7 Alignment to other trades and activities

In addition to basic competence requirements specific to ductwork installation, installers may also expand their scope of work as they progress towards supervisory roles or to multi-skill at critical trade junctions. This may include competence in work coordination, commissioning & decommissioning of systems, penetration sealing and/or installation of fire resisting insulation. Further activity will be required to identify appropriate standards and routes to competence and/or align with routes for specialists in other trades. It is important that consistent standards are set which do not undermine the requirements already set out for those in other trades.

Recommendation 21: Further work should be carried out on competence standards and routes for progression and multi-skilling of installers

2.8 Devolved nations consistency

In setting out requirements for the development, measurement and validation of competence, consideration of the best methods of ensuring consistency between England and the devolved nations is required. This is particularly important where parts of the workforce on national borders may operate in more than one nation. It is essential that a consistent bar for competence is set and adhered to throughout the UK.

Additional collaboration with qualifications regulators, skills bodies and awarding organisations will be required to encourage take up of the additional requirements for competence identified in the devolved nations as these sit outside the direct scope of application of the Building Safety Act.

Recommendation 22: Additional collaboration with the devolved nations should be made to drive consistency in standards of competence across the UK

2.9 End user considerations

Any solutions developed in this area need to consider what the market can / will bear in addition to providing robust routes to competence. Cost is a key issue – organisations need to see the value that they are getting from training and assessment processes to be able to justify the spend. Likewise, time taken to complete any processes needs to be considered to ensure that unnecessary burdens are not being placed upon individuals or organisations. Employers / contract holders acknowledge that competence is a requirement and that individuals will need to go through a process but want to ensure that this is as streamlined as possible to ensure that buy-in can be gained from those working in the sector.

2.10 Communications

Communication will be critical to ensure uptake of any final solutions. The value of competence processes needs to be communicated to be seen as credible. This also needs to link back to quality of work. Communications need to show the benefits and why these solutions are different to what has come before.

Across the board, support from the Skills Partnership Committee to review products against the competence standards, any quality requirement in place within industry, and training /

assessment specifications, and make clear which products are confirmed as contributing to competence would be helpful.

Recommendation 23: The Skills Partnership Committee should promote the competence requirements approved by industry, and maintain a list of both qualifications and non-qualifications products that contribute to evidence of competence

3 Functional map and framework of competencies

3.1 Development background

A functional map has been created which breaks down the work carried out within the scope of ductwork installation (as defined in section 1.1) into discrete activities. These activities reflect the roles, responsibilities and types of work that are undertaken and, where appropriate, include differences by product type (but not by specific manufacturer or product range).

Activities within the functional map have been designated as ‘mandatory’ where all installers are expected to demonstrate competence, or ‘additional’ where some installers may be required to demonstrate competence. It is expected that individuals and employers will choose the relevant activities from the functional map when determining the competence to be demonstrated within an individual’s particular role scope.

Each activity has then been broken down into competency statements outlining the skills, knowledge, experience, and behaviour (SKEB) required to perform that activity competently. The most recent versions of National Occupational Standards (NOS) have been used as the basis for skills and knowledge statements. Statements for experience and behaviour and, where necessary, additional specific knowledge statements have been added to create fit for purpose competence standards.

Together, the functional map and SKEB statements set out the benchmark for competence in each activity. These are designed to be used in conjunction with the expectations of the standard for competence set out in section 4. The routes to competence defined within that standard have been designed to demonstrate competence against this framework.

3.2 The functional map and framework of competencies

The detailed functional map and SKEB statements can be found in the spreadsheet included alongside this consultation document: DICG-OP005 – Ductwork Installation FM & SKEB FINAL v1 (11.06.25).

Note that although upskilling and multi-skilling activities have been included within the functional map, only those prioritised as phase 1 have been addressed in this paper. A subsequent phase of work will be required to address phase 2 activities.

3.3 Mapping to other standards and frameworks

The SKEB statements developed have been mapped against BS 8670-1:2024⁵, the relevant BSE Skills NOS, and the emerging requirements for construction products competence as outlined in the WG12 whitepaper⁶. Details of that mapping can be found in the framework spreadsheet

Consideration has also been given to the contents of the whitepaper by the Joint Competence Initiative for the Building Envelope Sector (JCI), published in June 2023⁷.

⁵ BS 8670-1:2024 – TC – Competence frameworks for building safety – Core criteria. Code of Practice. BSI. Published: 31 May 2024. Available from: <https://knowledge.bsigroup.com/products/competence-frameworks-for-building-safety-core-criteria-code-of-practice>

⁶ Built Environment – Proposed construction product competence standard – white paper. CPA. Published September 2022. Available from: <https://www.constructionproducts.org.uk/publications/technical-and-regulatory/built-environment-proposed-construction-product-competence-standard-white-paper/>

⁷ Achieving Competence in the Building Envelope Sector. JCI. Published June 2023. Available from: <https://c-a-b.org.uk/wp-content/uploads/White-Paper-Achieving-Competence-in-the-Building-Envelope-Sector-Publication-Version-09.05.23.pdf>

4 The standard for competence

4.1 Target audiences

This standard for competence is intended to address the needs of the following:

- New entrant (4.6.1)
- Job mover (moving from allied trade) (4.6.1)
- Experienced worker (unqualified) (4.6.1)
- Experienced worker (qualified) (4.6.2)

Individuals will need to meet the requirements set out in the framework of competencies (section 3) for activities relevant to their specific job role. The routes to competence described in section 4.6 set out how this can be achieved.

As the type and scope of an employer's work changes it is possible that employees will need to extend their job role scope to cover more activities. A method for adding additional activities is therefore provided (see section 4.6.3).

4.2 Preparing to evidence competence

Individuals may use a combination of formal and informal learning to prepare to demonstrate competence.

Training alone (without embedded summative assessment) does not provide evidence of competence, but it is a useful enabler to prepare individuals to create the evidence of skills and knowledge required. Training may be carried out in house or through third-party training providers. When purchasing training, individuals and employers should check that this meets the requirements of the framework and will have value to them.

In addition to aiding development of knowledge and skills, informal learning in the workplace will also help to develop experience and behaviour.

4.3 Collecting evidence of competence

Individuals (in conjunction with their employer where appropriate) should select relevant activities from the functional map according to role scope. This should include all mandatory activities, and any relevant additional activities. Determination of competence should then be made through gathering evidence that the SKEB statements set out for relevant activities have been met in accordance with one of the routes to competence outlined in section 4.6.

- Evidence of skills and knowledge should be obtained through achievement of a relevant qualification or programme of assessment meeting the competence standard, approved as fit for purpose by the Skills Partnership Committee
- Experience (continuing application of skills and knowledge) can be demonstrated through collecting and storing evidence of work carried out in accordance with the benchmarks for experience set out within the selected activities
- Evidence of behaviour may be gained through performance management systems, including formal appraisals or reviews, or supervisor / team-leader feedback

Individuals who have yet to meet the required standard of competence for a particular activity should be supervised by a competent individual until competence has been demonstrated.

4.4 Validating competence

Individuals and their employers should validate that evidence of competence is in place across the full scope of relevant standards, as set out in the SKEB statements within the framework, and in accordance with the routes to competence.

It is recommended that a third-party system is utilised, to provide an objective check. For example, this may be through a specific third-party installer certification scheme, a certificated quality management system incorporating management of individual competence, or a trade association membership scheme. Widening of the current industry registration scheme to incorporate full requirements for competence may also support industry in validating competence.

Where use of third-party validation is inappropriate, structured mechanisms for collating and checking evidence should be in place.

4.5 Revalidation of competence

Continuing demonstration of competence and revalidation of that competence are a key component of any assurance scheme. Competence should be revalidated every five years. As with initial validation, it is recommended that a third-party system is utilised, to provide an objective check.

Evidence contributing to revalidation should be collected according to the routes to competence set out in section 4.6.4 and the requirements of the framework of competencies.

Alongside ongoing collation of evidence to demonstrate baseline competence, individuals should also complete and collate evidence of relevant manufacturers' training for the products / systems they are using.

4.6 Proposed routes to competence

The following are routes to competence for each entry point. It is expected that an employer or individual will define the job role relevant to their scope of activities (as set out in section 4.3), aligned to the relevant occupation, and that individuals will be developed to that level using the appropriate route.

It should be noted that further development will be required to put those routes to competence in place, specifically to ensure that appropriate products are in place for individuals and their employers to access. Until the point where new routes to competence are available, existing competence guidance should be followed.

4.6.1 *Evidencing initial baseline competence (general ventilation ductwork) – new entrant, job mover and experienced worker (unqualified)*

Individuals develop their skills, knowledge, experience and behaviour in the workplace, supported by appropriate third-party training where required.

Individuals must provide the following evidence of competence:

- Completion of BSE specific fire safety training
- Completion of skills & knowledge assessment (e.g. qualification) approved by the Skills Partnership Committee as meeting the requirements of the competence framework, in mandatory activities

- Collated evidence of experience in line with the requirements of the competence framework, in mandatory activities
- Collated evidence of behaviour in line with the requirements of the competence framework, in mandatory activities

Individuals will be eligible for a blue, skilled worker SKILLcard for general ventilation ductwork installation on completion of the first two items, and the relevant Health, Safety & Environment (HS&E) test.

Individuals may then go on to develop their competence further and provide evidence in additional activities

4.6.2 *Evidencing competence – experienced worker (qualified)*

Where experienced workers hold existing qualifications, additional assessment may be required to confirm that the skills and knowledge requirements have been met.

Individuals must provide the following evidence of competence:

- Completion of BSE specific fire safety training
- Evidence of an existing, relevant qualification
- Completion of a bridging knowledge / skills assessment against relevant activities
- Collated evidence of experience in line with the requirements of the competence framework, in relevant activities
- Collated evidence of behaviour in line with the requirements of the competence framework, in relevant activities

Individuals will then be able to renew their blue, skilled worker SKILLcard in relevant activities, subject to re-completion of the relevant HS&E test.

4.6.3 *Addition of further competencies*

Following completion of general ventilation competence, individuals may need to add on competence in other activities, dependent on their scope of work. This may include installation of fire resistant ductwork, smoke control ductwork, or various types of dampers. The requirements for these over and above the requirements for general ventilation ductwork are set out within the functional map & SKEB statements created (see section 3.2).

These additions may be made simultaneously or at various points throughout an individual's career as they extend their scope of work.

Individuals will continue to develop their competence in the workplace, supported by appropriate in house and/or third-party training where required.

Individuals must provide the following evidence of competence, in addition to that set out in section 4.6.1 or 4.6.2:

- Completion of knowledge assessment approved by the Skills Partnership Committee as meeting the requirements of the competence framework, in relevant additional activities

- Collated evidence of experience in line with the requirements of the competence framework, in relevant additional activities
- Collated evidence of behaviour in line with the requirements of the competence framework, in relevant additional activities

Individuals will be eligible for a blue, skilled worker SKILLcard in relevant activities on completion of these items, and the relevant HS&E test.

4.6.4 *Evidencing currency of competence*

Evidence of currency of competence should be collected regularly throughout the five-year validation period, in order to support revalidation. Individuals must provide the following evidence of ongoing competence:

- Completion of any relevant skills / knowledge updates (CPD) (e.g. legislative updates, technological changes)
- Ongoing evidence of experience (continuing application of skills and knowledge over time) meeting the requirements of activities in the framework for which competence needs to be maintained
- Ongoing evidence of behaviour meeting the requirements of activities in the framework for which competence needs to be maintained
- Completing the relevant HS&E test where ongoing SKILLCard registration is required

Individuals should also have completed manufacturer training relevant to their scope of work and the products / systems being installed.

4.7 Relationship to organisational capability

Alongside demonstrating the competence of individuals within their workforce, companies also need to demonstrate organisational capability. This can be evidenced through being part of a certification scheme or trade body membership scheme that embeds these requirements for competence within it.

4.8 Ongoing monitoring and maintenance

This standard and the functional map / framework of competencies will be managed and maintained by the BSE Skills Partnership, with practical support provided by DICG.

The Skills Partnership will maintain a list of approved programmes which contribute towards the evidencing of competence in order to support employers in identifying appropriate provision.

5 Implementing the standard

It has been acknowledged that further development work will be required to put in place the proposed routes to competence for the sector. The following table sets out the next steps required to fully implement the competence requirements set out within this paper. It should be noted that this list is not necessarily exhaustive, and further actions might be identified as work progresses.

Where specific product development is required, estimated time required for that development to take place has been factored into the timescale outlined. This may be subject to change as more detailed requirements emerge

Activity required	Purpose	Owner	
Develop standard training specification	To drive consistency in training & support alignment of training with assessment	BESA / DICG / training providers	Q4 2025
Develop standard assessment specification (requirements and guidance for assessors & assessments)	To drive consistency in assessment between providers	BESA / DICG / assessment providers	Q4 2025
Create bridging assessments for skills and / or knowledge	To allow those with existing qualifications to evidence against the new standard	BESA / DICG	TBD
Review NOS: SUMMES07-09	To ensure these remain fit for purpose	BSE Skills	TBD
Revise SVQ 2 qualification structure	To incorporate standards for damper installation	BSE Skills	TBD
Retire COSVR352 from NOS and qualification structures	To create a single consolidated pathway for demonstration of ductwork installation skills and knowledge	CITB	TBD
Finalise BSE specific fire safety training	To create contextualised fire safety awareness training	BESA	Q3 2025
Determine mechanism for delivery of additional assessments when upskilling in specific activities	To create a pathway for ongoing assessment that is easy to access	BESA / DICG	Q3 2025
Create guidance on what constitutes good CPD / manufacturers' training looks like	To support employers when selecting third party training	BESA / DICG	Q4 2025

Activity required	Purpose	Owner	
Engage with devolved nations stakeholders to encourage take-up of additional competence requirements	To ensure consistent requirements for competence are in place throughout the UK	BESA	Q4 2025
Create example evidence records for experience & behaviour	To support employers in capturing evidence of experience and behaviour	BESA / DICG	Q3 2025
Make updates to SKILLCard register in line with revised requirements	To increase granularity of registration and incorporate full scope of competence	BESA SKILLCard	Q4 2025
Approach CITB regarding maintenance of funding for fire resistant ductwork	To maintain a funding stream for in-scope employers installing fire resisting ductwork	BESA	TBD
Communicate new requirements and changes regarding competence to industry	To drive awareness of competence requirements and support industry	BESA / DICG	Q3 2025
Maintain list of approved provision	To make it clear to employers what has been approved as supporting demonstration of competence	Skills Partnership	Ongoing
Complete phase 2 work on additional competencies for upskilling and multi-skilling	To ensure requirements are in place at specific trade junctions and in extension of installer competence	DICG	Q3 2025

Appendix 1 - Consolidated list of recommendations

Recommendation 1: An activity based approach should be used when defining required standards of competence

Recommendation 2: NOS should form a basis for development of competence standards in this area

Recommendation 3: Competence standards should build on the NOS to ensure full coverage of SKEB requirements in relevant activities

Recommendation 4: NOS underpinning the level 2 (SCQF level 5) SVQ (SUMMES07 – 09) should be reviewed and any identified amendments incorporated into the competence standard

Recommendation 5: The installation of fire resistant ductwork NOS (COSVR352) should be retired from the passive fire protection suite owned by CITB

Recommendation 6: The fire resisting ductwork installation unit should be removed from the passive fire protection qualification to leave a single, consistent qualification route for learners

Recommendation 7: Damper installation, in accordance with the relevant NOS, should be integrated into the L2 qualification

Recommendation 8: The Skills Partnership Committee should approve all products which contribute to evidence of competence and make it clear how these relate to the activities and statements set out within the competence framework

Recommendation 9: Bridging assessments for skills and/or knowledge should be created to allow individuals with existing qualifications to demonstrate that they meet the requirements of the new framework

Recommendation 10: A standard assessment specification aligned to the competence standard should be created and maintained to drive consistency of assessment between providers

Recommendation 11: Mechanisms for evidencing experience and behaviour should be set out within the routes to competence

Recommendation 12: A standard training specification aligned to the competence standard should be created and maintained to support consistency of training delivery

Recommendation 13: Building services engineering specific basic fire safety awareness training should be incorporated into installer routes to competence

Recommendation 14: Installers should complete appropriate manufacturers' training in the products and / or systems that they are using, alongside demonstrating baseline competence

Recommendation 15: Guidance on what constitutes good CPD / manufacturers' training should be developed to support industry

Recommendation 16: Additional guidance on how to evidence competence should be made available to industry

Recommendation 17: Card scheme registration should be made more granular to make it clearer what types of ductwork products or systems someone has the skills / knowledge to install

Recommendation 18: BESA SKILLCard should consider how it might support validation / evidencing of competence across the full scope of SKEB

Recommendation 19: Routes to competence should consider the threshold(s) for continuing demonstration of competence

Recommendation 20: Routes to competence should consider all potential mechanisms for ensuring currency of competence, not just formal training and/or assessment

Recommendation 21: Further work should be carried out on competence standards and routes for progression and multi-skilling of installers

Recommendation 22: Additional collaboration with the devolved nations should be made to drive consistency in standards of competence across the UK

Recommendation 23: The Skills Partnership Committee should promote the competence requirements approved by industry, and maintain a list of both qualifications and non-qualifications products that contribute to evidence of competence

Appendix 2 - Terms & definitions

Behaviour

Observable traits or ways of working that should be displayed. Observable things that an individual does or does not do

Competence / individual competence

Application of skill, knowledge, experience, and behaviour consistently by an individual to achieve a specific outcome

Standard for competence

Procedures & requirements for developing, measuring, validating, and proving competence against agreed skills, knowledge, experience, and behaviours required for an individual undertaking a role, function, activity, or task in order to perform their work to predetermined standards and expectations and maintain or improve their performance over time. This is sometimes referred to as a competence framework or competence standard

Continuing professional development (CPD)

Activities undertaken by an individual to maintain and develop competence, including formal and informal learning, self-assessment, obtaining feedback and identifying areas for improvement

Firestopping

Firestopping techniques encompass those used for penetration seals for services e.g. cables and pipes, linear joint seals, cavity barriers (e.g., in voids in roof spaces, above suspended ceilings, within walls and in external walls). Firestopping is also required as part of some other passive fire protection measures, including around fire door frames, around fire resisting /smoke control ducts and dampers.

Experience

Participation in relevant activities or observation of facts and events leading to

acquisition, improvement or demonstration of skills and knowledge

Formal learning

Organised and structured learning against formal learning objectives

Framework of competencies

Agreed statements of skills, knowledge, experience, and behaviour against specific activities identified in the functional map

Functional map

A map of activities included in the sub-sector, split into pre-determined levels of complexity

Individual

A single human being

Informal learning

Self-directed learning, or learning from experience

Higher-risk building (HRB)

Building subject to enhanced regulatory requirements or where risks might be considered elevated (for example as a result of the physical characteristics of the building, the way in which the building is used, or as a result of human factors)

Job role

The specific combination of activities performed in a specific role, as agreed between an employee and an employer. This may change over time, or from employer to employer, or between employees of the same employer

Knowledge

Assimilation of facts, theories, and practices in relation to a given role, function, activity, or task

Occupation

The area of work undertaken by a category of employees, each of which may have a related but different job role. This is standard across the entire industry

Organisational capability

The combination of people, practices and other resources brought together by a business to allow it to function effectively and deliver value to customers and stakeholders

Qualification

A regulated programme of assessment, sometimes with aligned training, which results in the issue of a nationally recognised award being made upon completion

Revalidation

The formal process of reassessing an individual's competence against a sector-specific framework on a periodic basis to check that competence has been maintained

Sector-specific competence framework

A competence framework relevant to a specific role, function, activity, task, trade, or discipline

Skill

The ability to perform an activity or task consistently with a specific intended outcome

Validation

The formal process of assessing an individual's competence against a sector-specific framework