

## **BSA Manual Support Document**

### **Contractors Competency Matrix Guidance**

#### **Cavity Insulation**

## Overview

This document outlines the current qualifications and competency standards for External Wall Insulation (EWI) within the Insulation and Building Treatment Sector. It aims to assess whether the existing structure sufficiently trains, qualifies, and monitors workforce competence, following building regulations and industry best practices.

The document provides an overview of the current competence requirements and training pathways for the EWI workforce.

Definitions:

- SKEB: Skills, Knowledge, Experience, and Behaviours
- VQ: Vocational Qualification (e.g., NVQ, SVQ)
- COSVR XXX: Specific National Occupational Standards
- RQF: Regulated Qualification Framework (England)

The document outlines the required competencies for various roles in EWI, based on National Occupational Standards (NOS). It includes experience, behaviours, and core trade competencies, which are continuously reviewed in line with NOS and apprenticeship standards.

## Functional Map Activities

	England and Wales Proposed Competency Group			Scotland			Short Duration Training Standards	Revalidation
Core Construction Competencies	EWI Fixer	EWI Finisher	EWI Fixer/Finisher	EWI Fixer	EWI Finisher	EWI Fixer/Finisher		
Confirm work activities and resources for the work	X	X	X	X	X	X		
Develop and maintain good working relationships	X	X	X	X	X	X		
Confirm the occupational method of work	X	X	X	X	X	X		
Conform to general health, safety and welfare in the workplace	X	X	X	X	X	X	Fire safety in buildings	
<b>Core Trade Competencies</b>								
Install external wall insulation	X		X	X		X	Surface preparation and board installation for EWI Exterior wall surface preparation and application of a surface water repellent Preparing to and installing EWI	
Apply surface finishes to external wall insulation		X	X		X	X	Applying surface finishes to external wall insulation	
Insulation and building treatments building construction, defects and interfaces	X	X	X	X	X	X	Insulation and building treatments (IBT) building construction, defects and interfaces	

## Experience

Information that can be evidenced to confirm level of experience	Assessment Methods
<ul style="list-style-type: none"> <li>Provide evidence of Qualifications</li> <li>Provide evidence of Training (EWI training, non-qualification and systems specific training)</li> <li>Provide evidence of experience</li> <li>Provide evidence of projects worked on</li> <li>Testimony from clients/customers</li> <li>Job description and role from employer</li> <li>Written testimony from employer</li> <li>Current CV</li> <li>Photographic and videographic evidence</li> <li>Transferrable skills</li> <li>CSCS Card</li> </ul>	<ul style="list-style-type: none"> <li>Review of portfolio provided</li> <li>Review of logbook</li> <li>Review of current CV</li> <li>Observation</li> <li>Touch screen test</li> <li>Q &amp; A session</li> <li>Professional discussion</li> </ul>

## Behaviours

- Prioritizing health, safety, and wellbeing, and reporting non-compliance
- Considering environmental and sustainability factors when using materials and resources, including waste management
- Taking ownership of work and personal decisions
- Promoting a fair, diverse, and inclusive workplace culture
- Pursuing continuous personal and professional development through training
- Adapting to new situations with clients, customers, and other contractors
- Collaborating effectively within a team, with adaptable communication for different audiences
- Managing time efficiently and respecting communication channels
- Considering site environment differences compared to domestic settings
- Representing the trade and employer in a positive light through behaviour.

## General Skills and knowledge

This standard emphasizes the importance of interpreting information accurately while ensuring that work practices are safe, healthy, and environmentally responsible. It requires the careful selection and use of materials, components, tools, and equipment, with a focus on minimizing damage during operations. Additionally, workers are expected to complete tasks within the allocated time, always adhering to organizational requirements that meet or exceed current statutory and legislative standards. These practices aim to ensure high-quality, efficient, and compliant work in line with both industry expectations and legal obligations.

## Experience

	Skills	Knowledge
Interpret Information	<p>Interpret and use the information relating to the work and resources to confirm its relevance for the following:</p> <ul style="list-style-type: none"> <li>drawings</li> <li>specifications</li> <li>schedules</li> <li>risk assessments</li> <li>method statements</li> <li>suppliers and manufacturers' information</li> <li>data sheets</li> </ul>	<p>Company procedures are developed to ensure consistency, safety, and compliance in operations. They are implemented to maintain quality control, streamline processes, and align with legal and regulatory standards.</p> <p>Various types of information are used, including:</p> <ul style="list-style-type: none"> <li>Drawings, specifications, and schedules: Guide the design and construction process.</li> <li>Risk assessments and method statements: Identify hazards and outline safe working practices.</li> <li>Standards and supplier/manufacturer information: Ensure products and practices meet industry benchmarks.</li> <li>Data sheets and official guidance: Provide technical details and recommended practices.</li> <li>Current legislation and regulations: Ensure compliance with legal requirements in building practices.</li> <li>It's crucial to report and correct inappropriate information to maintain safety, compliance, and the accuracy of the work.</li> </ul>
Safe work practices	<p>Comply with the legislation and official guidance to carry out the work and maintain safe and healthy work practices relating to the following:</p> <ul style="list-style-type: none"> <li>methods of work</li> <li>safe use of health and safety control equipment</li> <li>safe use of access equipment and harness systems</li> <li>safe use, storage and handling of materials, tools and equipment</li> <li>operative maintenance of installation equipment</li> <li>specific risks to health including mental health</li> <li>specific risks associated with ventilation and combustion appliances</li> </ul>	<ul style="list-style-type: none"> <li>Fire Extinguishers: Different types (water, CO2, foam, powder) are used based on the fire type.</li> <li>Emergency Responses: Follows company procedures and personal limits for handling fires, spills, injuries, occupational emergencies, and identifying asbestos-containing materials.</li> <li>Security Procedures: Ensures tools, equipment, and personal belongings are secured on-site, with specific focus on vehicles, material storage, and access equipment.</li> <li>Reporting Risks: Risks and hazards are reported using risk assessments, personal evaluations, safe working methods, and technical data from suppliers and manufacturers.</li> <li>Accident Reporting: Procedures for reporting accidents, with specific responsibility outlined.</li> <li>Health and Safety Control Equipment: Use of protective measures like PPE, RPE, LEV, and collective safety measures based on prevention principles.</li> <li>Environmentally Responsible Practices: Complies with legislation and standards when working in challenging environments like confined spaces, at height, and when handling materials, tools, and manual/mechanical lifting.</li> <li>These procedures aim to ensure a safe and compliant working environment, minimizing risks to people, property, and the environment.</li> </ul>
Selection of resources	<p>Select the required quantity and quality of the following resources for the methods of work:</p> <ul style="list-style-type: none"> <li>check the suitability, compatibility and characteristics of the materials, components and finishes, and determine if they are moisture open or moisture</li> <li>record and report issues or defects</li> <li>Select tools and equipment</li> </ul>	<ul style="list-style-type: none"> <li>Resource Characteristics: Understanding the properties of resources helps in selecting the right materials, addressing any defects, and ensuring their proper use.</li> <li>Organisational Procedures: Procedures for selecting resources ensure they meet the required specifications and guidelines for efficient use.</li> <li>Confirmation of Compliance: Resources must conform to specified standards and materials should be checked for compliance.</li> <li>Problem Reporting: Any issues with resources should be reported to ensure they are dealt with appropriately.</li> <li>Hazard Identification: Identifying and managing hazards related to materials and methods is essential to ensure safety.</li> <li>Material Calculation: Accurately calculating material quantities and accounting for potential wastage helps optimize the use of resources, particularly for systems like external wall insulation.</li> <li>These practices ensure efficient, safe, and sustainable use of materials and resources in construction.</li> </ul>
Minimise the risk of damage	<p>Comply with company procedures to minimise the risk of damage to the work and surrounding area by:</p> <ul style="list-style-type: none"> <li>protecting the work and its surrounding area</li> <li>maintaining a safe, clear and tidy work area</li> <li>disposing of waste in accordance with current legislation</li> </ul>	<ul style="list-style-type: none"> <li>Protection of Work Area: It is crucial to safeguard both the work and its surrounding area from damage caused by workplace activities, other occupations, or adverse weather. This includes minimizing damage to existing building structures.</li> <li>Waste Disposal: Waste must be disposed of safely and responsibly, following environmental responsibilities, company procedures, manufacturers' guidelines, statutory regulations, and official guidance.</li> <li>Work Area Maintenance: A safe, clear, and tidy work area is essential for productivity, safety, and to prevent hazards. Keeping the workspace organized reduces the risk of accidents and ensures compliance with regulations.</li> <li>These practices ensure the protection of both the work environment and surrounding areas, promoting safety, sustainability, and efficiency.</li> </ul>
Approach to work	<p>Complete your work within the estimated, allocated time and performance requirements of the system design, method statement and the required standard</p>	<ul style="list-style-type: none"> <li>Teamwork and Communication: Collaboration and clear communication are essential for efficient project execution, ensuring tasks are completed smoothly and issues are addressed promptly.</li> <li>Work Programme: Understanding the project timeline, including estimated and allocated times for tasks, is critical. Meeting deadlines is important to ensure project progress and avoid delays.</li> <li>Progress Tracking: Progress charts, timetables, and estimated times are used to monitor and evaluate the work. Organizational procedures should be followed for reporting any factors that could impact the work schedule.</li> <li>These practices ensure that work is completed on time and efficiently, maintaining good team coordination and communication.</li> </ul>

## Foundation

Skills	Knowledge
<p>Pre-Installation Checks:</p> <ul style="list-style-type: none"> <li>Remove, Measure, Mark Out: Ensure the area is properly prepared by measuring and marking out before installation.</li> <li>Cut, Line, Level, Drill, Fit, Fix: Perform all necessary preparation steps to ensure accurate fitting and alignment of materials.</li> <li>Assess, Record, Report: Check and document any issues in the work area, including: <ul style="list-style-type: none"> <li>Suitable access</li> <li>Vents, ducts, flues, and penetrations</li> <li>Services (gas, electric, water, media cables)</li> <li>Architectural features</li> <li>Vegetation</li> <li>Rainwater and soil water services</li> <li>Damp proof course</li> <li>Surface defects</li> <li>Trim projections, cills, and overhangs</li> <li>Protections like glazing, doors, floors, and roofs</li> </ul> </li> <li>Tool and Equipment Maintenance:</li> </ul> <p>Ensure all tools and equipment are used properly and maintained for optimal performance.</p> <p>Installation Tasks:</p> <ul style="list-style-type: none"> <li>Cut and Fix Pre-formed Trims &amp; Mounting Blocks: Fit the necessary trims and blocks.</li> <li>Install Pattresses for Fixtures and Fittings: Prepare the surface for fixtures and fittings.</li> <li>Apply Treatments to Existing Walls: Treat and prepare existing wall surfaces before installing insulation.</li> <li>Install Base Track and Seal: Install the base track and seal it according to the specifications.</li> </ul> <p>These steps ensure proper preparation, quality installation, and the safety and compliance of the external wall insulation system.</p>	<ul style="list-style-type: none"> <li><b>Work Methods &amp; Problem Identification:</b> It's crucial to identify and report unintended consequences and problems with methods or materials according to specifications. Problems must be resolved while following safe, healthy, and environmentally responsible practices.</li> <li><b>Pre-Installation Checks:</b> Pre-installation checks are necessary for assessing access, utilities (e.g., gas, electric), surface conditions, and architectural features. Identifying and reporting any issues, such as vegetation, surface defects, or potential water penetration, ensures the site is ready for installation.</li> <li><b>Repairs &amp; Protection:</b> Necessary repairs must be completed before installation, and protecting adjacent surfaces and work areas is vital. Removing fixtures, preparing surfaces, and applying surface treatments ensure the area is suitable for the system installation.</li> <li><b>Specialist Skills &amp; Reporting:</b> Identifying when specialized knowledge is required, such as for fire safety, asbestos, or heritage features, is critical. Proper reporting ensures safety and regulatory compliance.</li> <li><b>Avoiding Unintended Consequences:</b> It's important to recognize and report unintended consequences that may not have been addressed in the design, like thermal bridging, weather effects, and compromised functions of elements such as windows and doors.</li> <li><b>Installation:</b> Installing the insulated external wall system as per design, specification, and method statements is key. This includes tasks such as cutting and fixing trims, applying weather sealing, installing insulation, and ensuring all fixtures and finishes meet the specification.</li> <li><b>Quality &amp; Compliance:</b> Checking the quality of installation, including post-installation checks, is necessary to ensure compliance with specifications. This includes verifying ventilation systems, combustion air ventilators, and the integrity of air and vapor control layers.</li> <li><b>Working Safely &amp; Maintaining Equipment:</b> Adhering to safety procedures, such as using access equipment correctly and maintaining tools, is crucial for a successful and safe installation. Proper use of equipment and the integrity of materials ensures high-quality results.</li> <li><b>Reporting &amp; Documentation:</b> It's important to immediately report any unforeseen events or faults, including issues with materials or equipment malfunctions. Completing the installation with proper sign-off and documentation ensures the project is finished to satisfaction.</li> <li>Overall, these procedures ensure a safe, efficient, and compliant installation process, safeguarding both the workers and the finished building.</li> </ul>

## Apply surface finishes to external wall insulation

Skills	Knowledge
<p><b>Preparation and Pre-Installation Checks:</b></p> <ul style="list-style-type: none"> <li>Measure, Mark Out, Mix, Apply, Fit: Measure and mark the installation area, mix materials as required, and apply the system, ensuring any defects are addressed.</li> </ul> <p><b>External Pre-Installation Checks:</b></p> <ul style="list-style-type: none"> <li>Assess the area for suitable access and background condition.</li> <li>Check if the product used matches the specification and confirm fixing integrity.</li> <li>Identify vegetation, rainwater goods, system penetrations, the position of the damp proof course, vents, and services (gas, electric, water, media cables).</li> <li>Protection: Ensure openings, fixtures, and surrounding areas are protected against damage.</li> </ul> <p><b>Installation Tasks:</b></p> <ul style="list-style-type: none"> <li>Beads, Trims, and Joints: Apply corner and surface beads, trims, day breaks/joints, and expansion joints as specified.</li> <li>Base Coats and Reinforcement: Apply base coats, reinforcing mesh, and stress patches, checking at each stage for cracking and dampness.</li> <li>Sealant and Tapes: Apply sealant tapes and strips following the system designer's specification.</li> </ul> <p><b>Surface Finishing:</b></p> <ul style="list-style-type: none"> <li>EWI Surface Finishes: Prepare and apply surface finishes for the EWI system as per the design specification, which includes dash finishes and synthetic or non-synthetic renders.</li> <li>Weather Seals and Mastics: Fit weather seals and mastics according to the specification.</li> </ul> <p><b>Post-Installation:</b></p> <ul style="list-style-type: none"> <li>Reinstatement: Restore external furniture such as rainwater goods and system penetrations.</li> <li>Post-Installation Checks: Conduct checks to ensure compliance with the specification.</li> <li>Post-Installation Repairs: Address any necessary repairs before handover.</li> </ul> <p><b>Final Handover:</b></p> <ul style="list-style-type: none"> <li>Complete the handover process to ensure the installation meets all requirements, and ensure that the site is clean, safe, and compliant with regulations.</li> <li>These steps help ensure the proper execution, quality, and compliance of external wall insulation installation.</li> </ul>	<p><b>Identifying and Addressing Problems:</b></p> <p>Work Methods and Consequences: Identify, report, and take corrective actions for any unintended consequences of the work, ensuring that it aligns with the specification and maintains safety and environmental standards.</p> <p>Problems and Deviations: Follow procedures to report any issues that deviate from the specification or safe working practices.</p> <p>Pre-Finishes Checks: Carry out pre-installation checks, including assessing suitable access, background condition, product identification, fixing integrity, vents, damp proof course, trim projections, ventilation, and services (gas, electric, etc.).</p> <p>Identify and Report Issues: Check and report issues related to ventilation, flues, chimneys, water penetration, and thermal bridging before and after installation.</p> <p><b>Specialist Skills and Knowledge:</b></p> <ul style="list-style-type: none"> <li>Identify when Specialists are Needed: Recognize when specialist skills are required (e.g., fire safety, asbestos, electrical services, ecology) and report accordingly.</li> <li>Unintended Consequences: Record and report unintended consequences not addressed in the design to avoid compromising the work or system integrity.</li> </ul> <p><b>Installation Process:</b></p> <ul style="list-style-type: none"> <li>Work Area Protection: Ensure adjacent surfaces and work areas are protected during installation to avoid damage.</li> <li>Explain Procedure to Building Occupants: Communicate with building occupants regarding scope, safety requirements, protection of property, and specific benefits of the installation.</li> <li>Window and Door Function: Avoid compromising the function of windows, doors, or damp proof courses during installation.</li> </ul> <p><b>Installation and Quality Checks:</b></p> <ul style="list-style-type: none"> <li>Installation Requirements: Follow the specified installation quality requirements for materials, such as base coats, reinforcing mesh, weather seals, and surface finishes.</li> <li>Fixing Trims and Beads: Install corner surface beads, trims, and reinforcing mesh according to specification.</li> <li>Application of Finishes: Apply render finishes, including dash, synthetic, non-synthetic, paint, or brick effect finishes, and ensure proper installation around windows and doors.</li> </ul> <p><b>Post-Installation Checks and Maintenance:</b></p> <ul style="list-style-type: none"> <li>Check and Repair: Conduct post-installation checks to ensure compliance with the design specification, including fixtures, fittings, and penetrations. Report any discrepancies and carry out necessary repairs.</li> <li>Unforeseen Events: Record and report any unforeseen events (e.g., equipment malfunctions, faults not identified in the original design).</li> <li>Maintenance: Ensure proper maintenance of work tools and equipment during and after the installation process.</li> </ul> <p><b>Client and Occupant Communication:</b></p> <ul style="list-style-type: none"> <li>Post-Installation Guidance: Provide post-installation advice and homeowner packs to the client or building occupants.</li> </ul> <p><b>Final Handover:</b></p> <p>Complete the installation process with a final handover to the site manager or client, ensuring their satisfaction and compliance with all standards.</p> <p>By following these guidelines, the work will be executed efficiently and safely, ensuring compliance with regulations and specifications.</p>

# Insulation and building treatments building construction, defects and interfaces

Skills	Knowledge
<p>Pre-Installation Checks:</p> <ul style="list-style-type: none"> <li>Work Skills for Pre-Installation Checks: Demonstrate the ability to conduct both external and internal pre-installation checks to assess building construction, material interfaces, and potential defects. These checks ensure that the site is prepared for installation and that any issues are identified early.</li> </ul> <p>Identifying Common Building Defects:</p> <ul style="list-style-type: none"> <li>Salt Contamination: Identify areas affected by salt contamination, which can lead to deterioration or damage to building materials.</li> <li>Dampness Causes: Recognize the causes of dampness, including rising damp and rain penetration, which can compromise the integrity of walls and materials.</li> <li>Rain Penetration: Detect areas where rainwater may penetrate the building, leading to moisture issues.</li> <li>Internal Moisture Vapour: Identify internal moisture vapor, which could affect insulation and other building materials.</li> <li>Damaged Services: Spot damaged services such as electrical, plumbing, and media cables that may need attention before installation.</li> <li>Structural Defects: Detect structural defects that could affect the safety and stability of the building, ensuring repairs are made before proceeding with the installation.</li> </ul> <p>By carrying out these checks and identifying defects, potential risks can be mitigated, and the installation process will proceed smoothly.</p>	<p>Suitability, Compatibility, and Characteristics of Materials</p> <ul style="list-style-type: none"> <li>Materials and Components: It is crucial to evaluate the suitability, compatibility, and characteristics of materials, components, and finishes before application. Their impact on the building's performance and their alignment with the design should be carefully assessed to ensure the right choice of materials for the project.</li> <li>Reporting Defects: Identifying, recording, and reporting issues or defects in materials and finishes is essential to prevent further complications during installation.</li> </ul> <p>Pre-Installation Checks (External &amp; Internal)</p> <ul style="list-style-type: none"> <li>Importance of Pre-Installation Checks: Carrying out external and internal checks is vital to ensure the building is suitable for installation, and defects are detected early to avoid complications. This includes assessing the property for:</li> <li>Property Suitability: Ensure the building's condition and structure are fit for the installation.</li> <li>Structural Integrity: Check the strength and stability of the building's framework.</li> <li>Dampness &amp; Decay: Detect areas of damp or decay that could affect the installation.</li> <li>Exposure Ratings: Assess environmental exposure that may impact materials.</li> <li>Ventilation &amp; Services: Ensure adequate ventilation and the condition of utilities (gas, electric, water, media cables).</li> </ul> <p>Repairs Prior to Installation</p> <ul style="list-style-type: none"> <li>Repairs Before Installation: Ensuring all necessary repairs are completed prior to installation prevents delays and maintains building integrity. Addressing defects like structural damage, moisture issues, or damaged services early avoids complications later in the installation process.</li> </ul> <p>Impact of Construction on Energy Efficiency</p> <ul style="list-style-type: none"> <li>Construction Types and Energy Efficiency: Different construction types, such as roofs, walls, windows, and chimneys, must be assessed for compatibility with energy efficiency measures. Inappropriate treatments or neglecting specific construction aspects may lead to inefficiencies in insulation, airflow, and energy use.</li> <li>Sequencing of Installation: Proper sequencing of energy efficiency measures ensures that each treatment is applied at the appropriate stage to avoid interference with other systems or construction elements.</li> </ul> <p>Common Building Defects and Implications</p> <ul style="list-style-type: none"> <li>Identifying Defects: Common building defects include:</li> <li>Salt Contamination: Can lead to damage and reduced effectiveness of treatments.</li> <li>Dampness &amp; Water Penetration: Essential to address before installing energy efficiency measures to avoid moisture damage.</li> <li>Rising Damp, Moisture Vapour: Must be managed to ensure insulation and energy efficiency measures work correctly.</li> <li>Structural Defects: Identifying these ensures that installations do not compromise the building's stability.</li> </ul> <p>Building Fabric and Energy Efficiency</p> <ul style="list-style-type: none"> <li>Continuity of Insulation: Maintaining the continuity of insulation and energy efficiency measures is vital for preventing water ingress, reducing energy loss, and avoiding thermal bridging.</li> <li>Junctions &amp; Thermal Bridging: Special care must be taken in junctions (e.g., where walls meet windows or roofs) to avoid thermal bridging, which can lead to cold spots and condensation.</li> </ul> <p>Unintended Consequences</p> <ul style="list-style-type: none"> <li>Recognizing &amp; Avoiding Unintended Consequences: Understand the potential unintended consequences of building work, such as moisture control issues, insulation placement, and impacts on neighbouring properties. Taking steps to</li> </ul>



	<p>avoid these problems, such as proper ventilation and ensuring proper installation, helps to reduce future issues.</p> <p>Specialist Knowledge and Reporting</p> <ul style="list-style-type: none"> <li>▪ Specialist Knowledge: Recognize when specialist skills are needed for specific areas, including:</li> <li>▪ Fire Safety: Ensuring compliance with fire regulations.</li> <li>▪ Gas &amp; Electrical Services: Ensuring qualified professionals handle any gas or electrical work.</li> <li>▪ Asbestos &amp; Heritage Features: Understanding the need for specific handling and reporting when encountering asbestos or working on historically significant buildings.</li> <li>▪ Environmental Risks: Identifying and mitigating any environmental risks, including dampness, ventilation, and ecology.</li> </ul> <p>Considerations for Special Structures</p> <ul style="list-style-type: none"> <li>▪ Historical &amp; Special Interest Structures: For buildings of historical or special interest, special care must be taken to assess significance and ensure the installation process is appropriate for traditional construction and hard-to-treat buildings. This includes evaluating the impact of modifications on building integrity.</li> </ul> <p>Reporting &amp; Avoiding Unintended Consequences</p> <ul style="list-style-type: none"> <li>▪ Actions and Consequences: Every action taken during construction can have unintended consequences. It's essential to report issues early and avoid actions that could lead to damage or poor performance in the building. Recognizing, reporting, and addressing these issues helps prevent long-term problems.</li> <li>▪ By following these practices, the building's performance, energy efficiency, and structural integrity can be maintained, ensuring a successful installation that aligns with the design and requirements.</li> </ul>
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