Overview of the role

Applying and fabricating insulation and cladding materials.

Standard in development

L3: Industrial thermal insulation technician

Title of occupation

Industrial thermal insulation technician

UOS reference number

ST0521

Core and options

No

Level of occupation

Level 3

Route

Construction and the built environment

Typical duration of apprenticeship

24 months

Target date for approval

01/01/0001

Resubmission

No

Would your proposed apprenticeship standard replace an existing framework?

No

Does professional recognition exist for the occupation?

No
Occupation summary

This occupation is found within the Construction industry. Depending upon the industry sector, Thermal Insulation Technicians may work on a diverse range of sites working wherever pipework and services are located i.e. inside the plant or outside on the wider site:

- Process Plants (Chemical, food, brewing etc)
- Commercial Construction sites (Offices, Hotels, Schools, Leisure & Hospitals etc)
- Shipyards.
- Power Generation (Oil, Gas, Nuclear etc)

The broad purpose of the occupation for Thermal Insulation Technician apply multi-layer applications of specialist insulation systems, comprising of layers of high performance insulation, vapour barriers and weatherproof cladding.

In their daily work a Thermal Insulation Technician creates bespoke patterns using technical drawing equipment to fabricate specialist cladding materials, which are applied on top of specialist insulation systems to complex pipework, ductwork and vessels. The cladding material is required to protect the insulation system from environmental damage.

An employee in this occupation can expect to work in a supervisory capacity, mentoring and advising other operatives and assisting with the management of projects. They will ensure the appropriate standard and quality of work is maintained and that it conforms to the design specifications, taking any corrective actions they consider necessary.

Typical job titles

Industrial thermal insulation technician

Are there any statutory/regulatory or other typical entry requirements?

No

Occupation duties

<table>
<thead>
<tr>
<th>DUTY</th>
<th>KSBS</th>
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<tbody>
<tr>
<td>Duty 1 Work in compliance with occupational health, safety and environmental requirements to ensure the health, safety and wellbeing of self and others at all times.</td>
<td>K1 K9 K10 K17 K20 K24 K25 K26 K28 S1 S6 S8 S10 S11 S12 S18 S19 S20 B1 B5</td>
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<tr>
<td>Duty 2 Carry out their work in compliance with all current and relevant regulations and</td>
<td>K1 K2 K9 K10 K17 K18 K19 K26 S1 S5 S6 S7 S8 S10 S11 S12 S19 S20 B1</td>
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Duty 3 Ensure compliance with quality standards and site specifications.  
Duty 4 Proactively collaborate with stakeholders, clients and other colleagues to assess site conditions, ensuring good relationships are developed and maintained.  
Duty 5 Supervise activities of Thermal Insulation operatives including following technical design specification, instructions and data sheets including digital information.  
Duty 6 Plan work to ensure optimum quality and efficiency from the team, in line with weather conditions.  
Duty 7 Maintain a clear and safe worksite at all times, promoting sustainability practices.  
Duty 8 Design and develop patterns, fit and fabricate cladding and procure resources and materials in line with job specifications and instructions.  
Duty 9 Carry out continuous professional development to maintain knowledge of current and future developments affecting the role and share with others.  

**Knowledge**

**K1:** Health and safety regulations, relevance to the occupation and the technicians responsibilities. Health and Safety at Work Act, Control of Substances Hazardous to Health (COSHH). Manual handling, Working at height, Slips, trips and falls, Fire Safety and Environmental Awareness.  
**K2:** Methods of interpreting and extracting relevant information from drawings, specifications and work instructions using paper based or digital methods.  
**K3:** Resource calculation techniques: quantity, length and area of materials used for insulation and cladding to minimise waste.  
**K4:** Principles used to design and develop bespoke cladding patterns.  
**K5:** Methods of fabricating metal sheet cladding.  
**K6:** Characteristics of bespoke cladding systems: vapour barriers and weatherproof cladding.  
**K7:** Characteristics of multi layered insulation systems: closed cell and open cell insulation.
K8: Principles and methods of selecting and installing multi layered insulation systems: closed cell and open cell insulation.
K9: Specialist thermal installation techniques: closely fitting and staggered joints of pipework, ductwork, storage tanks, vessels, reactors, turbines, boilers and bulkheads.
K10: Principles of thermal conductivity in insulation products: temperatures and personnel protection.
K11: Techniques of cladding fabrication for: pipework, ductwork of storage tanks, vessels, reactors, turbines, boilers and bulkheads.
K12: Principles of procurement and supply chain management in the thermal insulation industry.
K13: Environmental and sustainability regulations and guidance within the insulation industry: carbon footprint impacts, costs and benefits.
K14: Principles and techniques for the selection and installation of sheet metal and specialist cladding systems: Jointing, sealing and weatherproofing.
K15: Organisational health and safety policies and procedures.
K16: Safe systems of work, control measure implementation and monitoring techniques: Risk assessment, method statements and permit to work.
K17: Assess and mitigate the risk of asbestos exposure in the refurbishment environment.
K18: Principles of using specialist equipment for fabricating metal cladding: swagers, lock formers, guillotine, folder, edgers and roller.
K19: Principles of checking, using and storing portable power tools; drills, nibblers and rivet guns.
K20: Principles of checking, using and storing hand tools: technical drawing tools, measuring tools, application tools.
K21: Planning and time management techniques.
K22: Coaching, mentoring and supervision techniques.
K23: Principles of quality control and assurance in the thermal insulation industry.
K24: Legislative guidance relating to equity, diversity, and inclusivity in the workplace.
K25: Well-being: mental and physical health considerations in self and others and how to access support.
K26: Written communication methods: digital and paper based: plant registers, quality assurance documents, risk assessments, method statements, work permits, site registers and induction registers.
K27: Verbal communication techniques and Industry specific thermal Insulation terminology.
K28: Principles of the erection and dismantling of portable scaffold towers.

Skills

S1: Apply health and safety policies and procedures.
S2: Interpret and extract information using paper based or digital techniques from drawings and specifications to inform work instructions.
S3: Communicate design specification and product requirements to others.
S4: Calculate resource and cost quantities from site specifications.
S5: Design and develop bespoke cladding patterns: design specification, location and environmental impacts including weather conditions.
S6: Select and install multi layered insulation systems: closed cell and open cell insulation.
S7: Fabricate sheet metal and specialist cladding from patterns.
S8: Select and install fabricated cladding to, for example: pipework, ductwork, associated equipment: storage tanks, vessels, reactors, fractionation towers, turbines, boilers or bulkheads.
S9: Use specialist equipment for fabricating metal cladding: swagers, lockformers, guillotine, folder, edgers and rollers.
S10: Check, use and store portable power tools for example: drills, nibblers and rivet guns.
S11: Check, use and store hand tools for example: technical drawing tools, measuring tools, application tools.
S12: Apply planning and time management techniques to identify project plan targets.
S13: Communicate with others verbally for example, internal and external customers, colleagues, and managers.
S14: Coach, mentor and supervise other thermal insulators.
S15: Assist with the management of projects, in line with all design specifications and project plans.
S16: Procure tools, equipment and materials.
S17: Supervise the safe and secure handling and storage of tools, equipment and materials.
S18: Supervise the erection and dismantling of portable scaffold towers and work safely at heights to comply with The Work at Height Regulations.
S19: Complete documentation - paper based or digital. For example, plant registers, quality assurance documents, risk assessments, method statements, work permits, site registers and induction registers.
S20: Implement and monitor safe systems of work and control measures.

Behaviours

B1: Promotes health and safety for self and others.
B2: Team focused, working with colleagues and others.
B3: Acts professionally.
B4: Support an inclusive culture.
B5: Contribute towards a sustainable workplace.
B6: Committed to continued professional development (CPD) for self and others to maintain and enhance competence.

Qualifications

English and Maths

Apprentices without level 2 English and maths will need to achieve this level prior to taking the End-Point Assessment. For those with an education, health and care plan or a legacy statement, the apprenticeship's English and maths minimum requirement is Entry Level 3. A British Sign Language (BSL) qualification is an alternative to the English qualification for those whose primary language is BSL.

Does the apprenticeship need to include any mandated qualifications in addition to the above-mentioned English and maths qualifications?

No

Consultation

Progression Routes
Supporting uploads

Mandatory qualification uploads
Mandated degree evidence uploads
Professional body confirmation uploads

Involved employers

Western Thermal Ltd, Severn Insulation Ltd, JS Miller Contracts Ltd, Ticon Insulation Ltd, Hertel Ltd, Rainham Industrial Services, Kaefer C&D Ltd, Cape Insulation Ltd, Excel Insulation Ltd, CGB Humbertherm, Consolidated Insulation Services Ltd, RDA Insulation Ltd, SHS Integrated Services Ltd, Lagwell Insulation Company Ltd, Darroch Insulation Services Ltd, Thermal Insulation Contractors Association