

CURTAIN WALL INSTALLER

Details of standard

Occupation summary

This occupation is found in The Construction Sector. Curtain Walling is an integral part of the building external envelope. Curtain walling installers work predominantly in the commercial market but there is a growing market for curtain wall screens on higher end residential projects. Usually manufactured from aluminium, it offers a lightweight framework which is fixed back to the building structure into which a range of infills can be inserted. These infill can be glass, panels, window units, ventilation and acoustic elements. Systems are available using Timber and Steel. Installation can cover health, education, retail, commercial and leisure sectors and can range from simple single storey retail screens to multi storey, high rise office and residential developments. Manufacturers/Installers can range in size from small owner/manager businesses to large multi-sited operations with turnover in excess of £20 million.

The broad purpose of the occupation is to install curtain wall systems to form all or part of the external envelope of a building. Curtain wall systems are structurally capable of spanning multiple floors. They can offer a continuous glazed façade covering the full height of the building. The installation process includes fixing of the primary system, securing the infill materials and applying all the perimeter abutment products following The Centre for Window and Cladding Technology (CWCT) guidelines and systems' manuals.

In their daily work, an employee in this occupation interacts with other members of the installation team, (the nature of the product necessitates a minimum of 2 people and quite often larger teams of 4 or 6 personnel), site managers and/or installation managers, the Client, main contractor and/or architect, design team members, other external envelope contractors, the system supplier and façade consultants. This is usually a site-based occupation and can involve working at extreme heights including the use of specialist access plant to handle and install the products. The installer may work directly for the system fabricator or work for a specialist installation company. The installers will travel to where the work/site is located. This can involve working away for a period of time and staying in local accommodation for the duration of the work programme. Working hours are generally between 7-8.00 am until 5-6.00 pm but may involve additional hours to maintain the project programme. Sometimes, depending on site access/usage during normal working hours, the installers may be required to work night shifts and weekend shifts.

An employee in this occupation will be responsible for working with a team ensuring they have the correct access, tools, plant and materials to carry out the installation. This may involve different parts of the building being worked on at one time. They will be responsible for the setting out and fixing of the main grid work in accordance with the approved drawings and works instructions. They will normally work under an Installation Manager, Project Manager and/or Site Manager who will task them with different duties during the project programme. On smaller projects they may work unsupervised due to the simpler nature of the installation being carried out. The work may also include the fitting of doors and windows into the curtain wall grid. They will also be responsible for continued professional development achieving additional training/qualifications such as International Powered Access Federation (IPAF), Prefabricated Access Suppliers and Manufacturers Association (PASMA) which will allow them to perform high-level work.

Typical job titles include:

Curtain Waller Installer, Curtain Wall Fixer, Curtain Wall Fitter, Façade Installer, External Building Envelope Installer

Occupation duties

Duty

Duty 1 Interpret drawings, specifications, risk assessments, method statements, programmes, systems manuals, regulations and standards. Ensure the product it is compliant with the specification regarding design limitations e.g. fire resistant or acoustic

Duty 2 Receive, unload, check, safely store and transport materials to site for installation following good handling practices preventing injury or damage

Duty 3 Carry out visual checks on delivered materials for quality, complete delivery, and correct fabrication and machining

Duty 4 Select the appropriate tools and equipment for work including access equipment. Also ensure all hand tools and lifting equipment, where required, are inspected for satisfactory condition to be used

Duty 5 Inspect the site for relevant access and power to allow the installation to start

Duty 6 Set out of curtain wall including obtaining relevant grid lines and datum levels from main contractor. System may require temporary fixings prior to being lined, levelled and plumbed and final fixing taking place.

Duty 7 Install grid work including mullions and transoms on vertical applications, purlins and rafters on sloped applications. Fix the grid work to the structure in accordance with specifications and approved drawings making allowance for dissimilar materials and fire stops if required. Follow the system suppliers' recommendations and CWCT guidelines

Duty 8 Apply and seal air seal gaskets within the system and relevant sealing pieces and thermal breaks

KSBs

K1 K2 K3 K6 K7 K9 K13 K17 K18 K20
K22 K29

S1 S2 S4 S7 S23

B2 B3 B4 B6 B7

K4 K9 K10 K11 K12 K21 K22 K27

S6 S7 S8 S10 S11

B1 B2 B5

K2 K4 K5 K9 K18 K19 K24 K29

S1 S8 S10 S11

B2 B3 B4 B7

K2 K10 K14 K23 K25 K36 K41

S1 S5 S12 S13

B2 B3 B4 B7

K4 K10 K13 K14 K15 K26 K27 K28 K32

S2 S3 S4 S8 S10 S11 S14 S15

B1 B2 B4 B6 B7

K1 K5 K10 K13 K17 K20 K22 K27 K28
K30 K34 K36

S1 S2 S3 S4 S14 S15 S18 S23

B1 B2 B3 B4 B5 B6 B7

K2 K5 K10 K11 K13 K17 K18 K23 K24
K25 K26 K30 K31 K33 K35 K40 K41
K43

S1 S2 S5 S6 S12 S13 S16 S17 S18 S23

B1 B2 B5 B6

K2 K10 K13 K24 K29 K31 K35

S1 S2 S17 S21 S23

B1 B2 B5 B6

Duty 9 Conduct interim inspection of plumb line and level in accordance with specifications and systems manuals and carry out any corrective work required

K4 K7 K17 K24 K28 K32 K36

S8 S9 S10 S11 S18 S23

B2 B3 B4 B7

Duty 10 Apply relevant setting blocks/support pieces to ensure correct load transfer of infill elements

K2 K5 K24 K29 K36 K38

S1 S2 S19 S23

B1 B2 B4 B5 B7

Duty 11 Install infill materials and products using temporary pressure plate (Stitch plates) according to the systems' manual and CWCT guidelines

K2 K5 K10 K11 K13 K14 K17 K22 K23
K24 K26 K31 K34 K38 K39 K44

S1 S2 S6 S7 S12 S13 S20 S23

B1 B2 B3 B5 B6 B7

Duty 12 Apply the perimeter closure products to head, cill and jambs of the screens to integrate with the adjacent trades prior to final periphery seal application. These may include pocket closers, balancer profiles, Ethylene Propylene Diene Monomer (EPDM) carriers and pressed metal closure profiles etc

K2 K5 K10 K11 K13 K17 K23 K24 K29
K41

S1 S2 S3 S23

B1 B2 B3 B5

Duty 13 Secure the infills in place using appropriate methods e.g. toggles and/or pressure plates to the correct torque setting according to systems manuals

K2 K5 K13 K17 K20 K23 K24 K29 K33
K37 K38 K42 K44

S1 S2 S5 S20 S23

B2 B3 B4 B5 B6

Duty 14 Apply decorative face caps, gaskets or weather seals according to specification and systems manuals

K2 K13 K16 K17 K19 K23 K27 K29 K43

S1 S2 S7 S15 S17

B2 B3 B4 B5 B6

Duty 15 Conduct interim and final inspections of the workmanship, ensuring drainage and ventilation is clear and functioning and the work is correct to specification and systems manuals

K4 K8 K13 K17 K21 K24 K27 K32 K40
K43

S2 S8 S9 S10 S22 S23

B2 B3 B4 B5 B7

Duty 16 Clean and handover to customer including main contractors, clients, architects, fabrication specialists, façade specialist

K4 K22

S7 S10 S11 S22 S23

B2 B3 B4 B5 B7

Duty 17 Complete any relevant documentation such as; sign off documents and/or handover documents for main contractors, site/product specific check lists, time sheets for additional works, and operation and maintenance manuals.

K3 K4 K6 K10 K17 K32

S2 S8 S11

B2 B3 B4 B5 B6

Duty 18 Comply with commercial, contractual, environmental obligations and consumer awareness

K1 K3 K4 K7 K8 K13 K16 K21 K23 K33

S2 S7 S11 S22

B1 B2 B4

KSBs

Knowledge

K1: The role of curtain walling in the fenestration industry. Key markets for curtain wall products - domestic, commercial, public sector and their requirements

K2: Different types of products and their purpose, including specialist products for blast mitigation, safety, security, and fire resistance

K3: Who they need to communicate with and when and communication techniques; verbal, digital and written. Limits of autonomy; reporting channels. What is expected of the workforce during handovers

K4: How a curtain wall system is designed and fabricated, how different designs will affect the specifications and the fabrication

K5: What project specific testing will be needed and why. How and when testing takes place. Types of testing. What happens during testing and why. Consequences of unsatisfactory results

K6: How scheduling and planning affect specifications, an installers' working practices and what risk assessments need to take place

K7: What is the purpose of snagging, what does it look for and what are its implications

K8: How to ensure a product is compliant with specification and no damage or marking has occurred during transportation

K9: Health and safety regulations and procedures, including: Health & Safety at Work Act, personal protective equipment (PPE), manual handling, Control of Substances Hazardous to Health (COSHH), Provision and Use of Work Equipment Regulations (PUWER), Local Exhaust Ventilation (LEV) how they must be applied in the workplace. RAMS (Risk assessments, dynamic risk assessments and method statements) and how they inform your work. Safe methods of work including HSE 2005 Work at Height Regulations, person safe systems, scaffold/ harnessing and limited access areas found in roof glazing. Accident and Emergency Procedures and reporting methods and why these are important including basic knowledge of first aid and RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations)

K10: Methods for the safe handling, movement and storage of frames and infills. Authority/licenses required to use moving and handling equipment such as cranes, forklift trucks and manipulators.

Different types of handling equipment/plant as required by various heavy frames and profiles. Working limits of handling equipment. Problems or damage that can occur and avoidance methods.

K11: How to stack and store products and materials safely, effectively and securely. Problems or damage that can occur with stored resources and how to overcome them

K12: Legislation, regulations and industry standards, including Centre for Window and Cladding Technology (CWCT) guidelines window energy rating standards, CE marking, secure by design, building regulations such as Approved Documents Parts A-J, K-N, P, Q and Regulation 7

K13: How to use MEWP (Mobile Elevating Work Platforms), the hazards and how to control the risks, what training is required and inspection, maintenance and examination

K14: When a road needs to be closed and how to deal with road closures

K15: Environmental considerations: safe disposal of waste, minimising waste (re-use and re-cycle), waste contractors permit, energy efficiency. How recycled aluminium is used in the industry

K16: Specifications, work instructions, diagrams, surveys, system specific checklists etc. what they include, how to complete them, different interpretations, query/error procedures

K17: Product types including specific fabrication elements to be checked prior to installation

K18: Architectural finishes and how to ensure they are free of damage or imperfections prior to installation

K19: Drawings and schedules including comprehensive working drawings and installation diagram dictating the installation schedule (start and finish points of the screen)

K20: Quality Assessments e.g. damage from transport affecting aesthetic appearance of the frame according to BS EN 12206 Part 1

K21: Toolbox talks and inductions and how they should affect working practices

K22: Safe use of hand/power tools understanding the limitations of battery powered tools. Basic RCD (Residual-current device) and PAT (portable appliance testing) Knowledge and how it affects the tools and equipment used on site

K23: Types of errors that occur; reporting and rectification. Error investigation techniques.

K24: How to check access/scaffold is correctly installed to allow; access to correct levels for work, positioning of products by handling equipment, safe working practices

K25: Basic surveying techniques for setting out such as measuring and comparing to approved drawings

K26: How to check the structure is correct to approved drawings, know how to check all floors to allow curtain wall to run full height without structural clashes and how to adjust initial setting out to compensate for irregularities between the building structure and approved drawings

K27: The different components and ancillary items within a curtain wall system such as air seal gasket, thermal breaks, support/setting blocks, perimeter closers, face caps, sealing pieces, pressure plates. How and why they are used, their importance and the consequences of being omitted or misused

K28: Types of bracketry and their uses (load bearing, wind restraint) and being able to determine their position. Remedial and corrective measures such as adjustable brackets to accommodate movement and settlement

K29: Materials compatibility e.g. what can happen if two materials are incompatible and preventing bi-metallic corrosion by use of an isolation component

K30: Reporting and recording measures, why they are important (i.e. contractual)

K31: The importance of fixings and heavier anchors, how to use them in accordance with installation drawings/manufacturers instructions

K32: The methods of sealing that can be used, when and why to use them and how to overcome problems that can occur

K33: What is line, level and plumb and how to check the installation for this

K34: What is deflection, what can cause deflection, what are the consequences of deflection

K35: How to install glazed elements and infill panels. The considerations, hazards and problems that can occur and how to overcome them

K36: How to install windows and doors into their positions, the considerations such as adjustments and any problems that can occur and how to overcome them

K37: Requirements for ventilation, how ventilation systems work in curtain walling, the considerations and hazards and the problems that can occur and how to overcome them

K38: How to use pocket closers, balancer profiles, Ethylene Propylene Diene Monomer (EPDM) carriers and pressed metal closure profiles

K39: Torque settings and how to find the appropriate setting in systems manuals

K40: Drainage types used in different systems, how they work. Any problems that can occur with them and how to overcome them

K41: Toggle and/or pressure plate and why is it used

K42: How to inspect work and how to report defects. Inspection and Handover Documentation as per company policy or systems house manuals.

K43: How to ensure all work is complete to avoid delays and what effect delays would have on the company and the company's profitability. How and why you ensure all additional works are recorded to support additional cost claims

K44: Employment rights and responsibilities, contracts and what you should be aware of e.g. Working Time Directive, Employment Rights Act 1996. Equality and diversity policies in the workplace

Skills

S1: Select the correct type and quantity of materials, components and equipment for each task in line with specifications/instructions

S2: Read and interpret specifications, diagrams, drawings, and work instructions such as BIM; following instructions

S3: Prepare the work area effectively, making the site safe and ensuring all parties are considered

S4: Perform dynamic risk assessments, identifying risks and hazards in the workplace and control measures

- S5:** Complete tools and equipment checks and adjustments. Use appropriate tools and equipment safely
- S6:** Handle, load, unload and store products safely to minimise damage
- S7:** Follow health & safety and environmental policy and procedures. Re-use, re-cycle and dispose of material, waste and scrap from the work area, as appropriate
- S8:** Check and inspect own work. Report work outcomes and problems
- S9:** Communicate with colleagues/customers; using common industry terminology appropriately and accurately
- S10:** Complete all relevant documentation to the job such as system specific checklists and accident and emergency reporting methods
- S11:** Use lifting and handling equipment/plant that is appropriate for the installation
- S12:** Use access equipment safely including the use of man safe systems
- S13:** Inspect the structure and survey the work area to ensure the drawings are accurate, the specification is correct and the installation can take place
- S14:** Set out the curtain wall system to gridlines and datums
- S15:** Correctly utilise the appropriate fixings, anchors and brackets to secure to the structure
- S16:** Correctly utilise the appropriate fixings and method to secure the curtain wall system to the structure
- S17:** Use a range of sealants and sealing methods correctly and according to specification.
- S18:** Check that the installation is plumb, line and level
- S19:** Use support/setting blocks correctly to avoid damage
- S20:** Install infill panels and secure them into place
- S21:** Apply face caps and gaskets correct to specification
- S22:** Complete own work correct to specification within the defined schedule.
- S23:** Carry out the handover process

Behaviours

- B1:** Has a health & safety-first attitude, for example, resists pressures to follow unsafe working practices
- B2:** Professional, for example, develops working relationships recognising dependencies, uses co-operative approaches to optimise workflow and productivity with limited supervision, shows respect for colleagues
- B3:** Takes responsibility, for example, completes own work to required quality standards
- B4:** Applies logical thinking, for example, uses clear and valid reasoning when making decisions related to undertaking the work instructions
- B5:** rks effectively, for example, undertakes work in a reliable, tidy and productive manner

B6: Applies time management, for example uses their time effectively to complete work to schedule and always arrives at, and ready to work on time

B7: Adaptable when required, for example adapts to changes to work instructions or variations in workplace contexts and environments

Qualifications

English & 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.

Additional details

Occupational Level:

3

Duration (months):

21

Review

This apprenticeship standard will be reviewed after three years

Find an apprenticeship

Version log

VERSION	DATE UPDATED	CHANGE	PREVIOUS VERSION
1	26/02/2020	Updated structure	Previous version
1	03/02/2020	Funding band first published. Approved for delivery	Not available
1	29/11/2019	Assessment plan first published	Not available
1	08/03/2019	Standard first published	Not available
1	31/07/2018	Initial creation	Not available

