

FENESTRATION FABRICATOR

Details of standard

Occupation summary

This occupation is found in the construction sector. Fenestration refers to the design, construction, or presence of openings in a building it can include windows, doors, louvres, vents, wall panels, skylights, storefronts, curtain walls, and slope glazed systems. Fabricators may supply directly to homeowners (retail/domestic market), the new-build market (house builders) or the commercial and public sector (local authorities, offices, shops, schools and hospitals etc). They can also supply the commercial refurbishment market.

The broad purpose of this occupation is to manufacture finished fenestration products such as conservatory roofing, curtain walls, glazed doors, glazed screening, roof lanterns, roof lights, patent/slope glazing, secondary glazing, shop fronts and windows. They usually specialise in a particular material – aluminium, timber, steel or uPVC and a range of products. They cut and assemble profiles together. Depending on the product they may add glass units, ancillary items for example, fixings and fastening, handles, hinges, locks and louvers, along with weatherproofing for example, gaskets, seals, membranes and sealants. Regardless of the product or material, it involves working to a specification, in line with quality standards, health and safety and environmental considerations.

In their daily work, an employee in this occupation interacts with the production/general manager whom they report to and depending on the size of the organisation customers (internal/external), other fabricators, delivery personnel, design office, internal stores and suppliers.

An employee in this occupation will be responsible for completing their own work, with minimal supervision, ensuring they meet set deadlines. They may work as part of a team, with responsibility for a specific aspect of the fabricator process, contributing to the production of the overall product.

Typical job titles include:

Aluminium/uPVC Fabricator, Double Glazing Window Factory Fabricator, Fabricator, Production Operative, Windows/Doors Fabricator

Occupation duties

Duty

Duty 1 Receive, unload, check and store materials and components, for example profile material, glass units and ancillary items ready for the fabrication process; ensuring all materials are present and in good condition.

Criteria for measuring performance

- Efficient and timely preparation for the fabrication process
- Damage to materials minimised
- Compliance with Health and Safety, including

K2 K3 K6 K7 K9
K10 K19

S10 S11 S13 S15
S16 S18

B1 B2

	<ul style="list-style-type: none"> manual handling • Compliance with company procedures • Shortages minimised 	
Duty 2 Identify and confirm fabrication requirements against work instructions/specifications.	<ul style="list-style-type: none"> • Correctly identified fabrication requirements using instructions and specifications that are assigned to the job 	<p>K1 K4 K5 K11 K21 K22</p> <p>S1 S2 S10 S11</p> <p>B3 B4 B6 B7</p>
Duty 3 Use fabrication equipment such as machines, hand and power tools; conducting equipment and/or machinery checks and adjustments in preparation for fabrication, including calibrations for accuracy of machine operation.	<p>Compliance with manufacturer's instructions to check and adjust machinery</p>	<p>K5 K6 K12 K13 K14 K15</p> <p>S5 S7 S10 S11</p> <p>B1</p>
Duty 4 Measure, cut, drill and prepare the profile length of various materials (aluminium, uPVC, wood etc.) that will form the finished product.	<ul style="list-style-type: none"> • Accuracy of work • Speed of work • Compliance with company procedure and method statements correctly • Compliance with Health and Safety 	<p>K4 K6 K8 K12 K13 K14 K18 K20</p> <p>S2 S3 S4 S5 S6 S7 S10 S11</p> <p>B1 B3 B4 B5 B6 B7</p>
Duty 5 Manufacture the product including mullions (vertical bars) and transoms (horizontal bars) using the relevant jointing method and/or machinery.	<ul style="list-style-type: none"> • Compliance with instructions or specifications and fabrication manuals • Speed to ensure the production programme is maintained. • Compliance with Health & Safety 	<p>K1 K4 K5 K6 K7 K11 K12 K13 K14 K15 K17 K20</p> <p>S2 S7 S8 S9 S10 S11</p> <p>B1 B3 B4 B5 B6 B7</p>
Duty 6 Assemble the product including opening frames, sashes or vents if applicable using fabrication methods such as crimping, sawing, welding, machining, bending and beading.	<ul style="list-style-type: none"> • Compliance with instructions or specifications and fabrication manuals • Speed to ensure the production programme is maintained. • Compliance with Health & Safety 	<p>K1 K4 K5 K6 K11 K12 K14 K15 K16 K17</p> <p>S2 S6 S7 S8 S9 S10 S11</p> <p>B1 B3 B4 B5 B6 B7</p>
Duty 7 Fix ancillary items to the product, for example handles.	<ul style="list-style-type: none"> • Compliance with work instructions, specifications and fabrication manuals. 	<p>K1 K3 K4 K5 K6 K11 K12 K16</p>

• All work carried out to agreed production programme.

S1 S2 S7 S8 S9
S10 S17

B1 B3 B4 B5 B6
B7

Duty 8 Check and inspect the product (such as windows, doors etc.) for any damage or imperfections in the frame or paintwork. Rectifying any defects, passing it on to appropriate colleagues or reporting the issue.

• Compliance with works instructions, specifications and fabrication manuals.
• All work carried out to an agreed production programme.

K1 K2 K3 K4 K5
K9 K10 K11 K17
K18 K20 K21

S2 S10 S11 S12
S13 S16 S17 S18

B2 B3 B4 B7

Duty 9 Clean and finish the product using appropriate materials and chemicals safely and ensuring the finished product functions correctly.

• Compliance with health & safety, including manual handling.
• Compliance with work instructions, specifications and company procedures.
• All work should be carried out to an agreed production programme.

K1 K2 K6 K18 K20

S1 S2 S4 S10 S11
S18

B1 B2 B3 B5 B6

Duty 10 Protect and/or tape finished product and store ready for transportation.

Compliance with regulations or company procedure.

K1 K2 K5 K6 K7
K10 K12 K19 K20

S1 S2 S10 S11
S14

B1 B2 B3

Duty 11 Complete documentation, for example worksheets, quality and environmental records.

K1 K3 K4 K5 K8
K9 K10 K17 K20
K21 K23

S2 S10 S11 S16
S17 S18

B2 B3 B4 B5 B6

KSBs

Knowledge

K1: The role of fabrication in the fenestration industry. Key markets for fenestration products - domestic, commercial, public sector and their requirements. Different types of products and their purpose, including specialist products for enhanced performance, safety, security and fire rating.

K2: How glass and profiles are manufactured including raw materials and processes.

K3: Other functions that fabricators interact with, for example surveying, processing, despatch, installation, service engineers; their purpose and interdependencies. Internal and external customers.

K4: Materials used in fenestration fabrication - aluminium, timber, steel or uPVC; their mechanical properties, uses and design limitations. Ancillary items - for example fixings and fastening, handles, hinges, locks and louvers; their purpose and how/where they should interact. Weatherproofing products and systems - for example, gaskets, membranes, sealants, weather seals and drainage systems; their purpose, compatibility, conditions for storage and use (shelf life).

K5: Legislation, regulations and industry standards, including window energy rating standards, CE marking, secured by design, building regulations documents AD-K, Product Standard (BS 7412, 8529), British standard testing for temperature, tolerance and weld, Health and Safety (Safety Signs and Signals Regulations) and Quality Management System (ISO 9001) application in the workplace.

K6: Health and safety, including: Health & Safety at Work Act, Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR), personal protective equipment (PPE), manual handling, Control of Substances Hazardous to Health (COSHH), Provision and Use of Work Equipment Regulations (PUWER), Hand Arm Vibration Syndrome (HAVS), Local Exhaust Ventilation (LEV); how they must be applied in the workplace. Risk assessments and dynamic risk assessments.

K7: Safe handling/movement of profiles and product/Safe handling, movement and storage of glass. Problems or damage that can occur and avoidance methods. Which authority/licenses are needed to use moving and handling equipment, such as cranes, forklift trucks and manipulators (it is not a requirement to hold such authority/licenses).

K8: Environmental considerations: safe disposal of waste, minimising waste (re-use and re-cycle), energy efficiency.

K9: Limits of autonomy; reporting channels.

K10: Who they need to communicate with and when, and communication techniques; verbal, written and digital. Documentation requirements.

K11: System (manufacturers manuals) and specifications - what they are and how to interpret them; what to do if suspect the specification is wrong or have any queries about the specification

K12: Tools, equipment and plant used in fenestration fabrication, including saws, routers, welding machinery, electrical/hand drills, screwdrivers, cranes and manipulators. What they are used for, correct safe use and storage. How to conduct machinery and equipment checks and adjustments. Start-up and shutdown procedures including emergency stops. Use of CAD (computer-aided design) and CNC (Computer Numerically Controlled) equipment in fabrication.

K13: Preparation techniques – planning work and resources.

K14: Techniques for measuring, marking, cutting and drilling materials to the required size and shape, accurately, safely and economically.

K15: Product assembly methods, including welding, fusing, crimping; order of processes.

K16: Techniques for fitting components, for example ancillary items, beading and glazing.

K17: Interim and final checking requirements– what needs checking (size, shape, design, components) and why.

K18: Types of errors that occur, investigation and rectification techniques, such as manual or mechanical adjustment.

K19: 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.

K20: Processes for handover to other functions/customers.

K21: Contractual arrangements, for example penalty clauses. Consumer rights – ‘satisfactory quality, fit for purpose and as described.’ How the role contributes to commercial operations.

K22: Employment rights and responsibilities, including Working Time Directive, Employment Rights Act 1996.

K23: Equality & Diversity in the workplace.

Skills

S1: Select the correct type and quantity of materials and components for each task.

S2: Read and interpret specifications, diagrams and work instructions; follow instructions.

S3: Plan work.

S4: Prepare the work area effectively.

S5: Complete equipment and machinery checks and adjustments.

S6: Measure, calculate, mark and cut materials.

S7: Select and use manual methods and machinery/workplace technology.

S8: Join/assemble materials.

S9: Fix ancillary items to products.

S10: Follow health & safety and environmental policy and procedures.

S11: Identify risks and hazards in the workplace and control measures.

S12: Check and inspect work – interim and final.

S13: Identify and rectify any work that is incorrect or incomplete.

S14: Label product; protect and package product for safe transportation.

S15: Re-use, re-cycle and dispose of material, waste and scrap from the work area, as appropriate.

S16: Communicate with colleagues/customers; use common industry terminology appropriately.

S17: Complete workplace documentation.

S18: Report work outcomes and problems.

Behaviors

B1: Has a health & safety-first attitude, for example, resists pressures to follow unsafe working practices.

B2: Professional, for example, develops good 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: Works 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: Adjustable when required, for example adapts to changes to work instructions or variations in workplace contexts and environments.

Qualifications

English & Maths

Apprentices without level 1 English and maths will need to achieve this level and apprentices without level 2 English and maths will need to take the tests for 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:

2

Duration (months):

18

Review

This standard will be reviewed after three years.

Find an apprenticeship

Version log

VERSION	DATE UPDATED	CHANGE	PREVIOUS VERSION
1	27/09/2019	Funding band first published	Not available
1	24/07/2019	EPA plan added	Not available
1	06/07/2018	Standard first published	Not available