

**UOS reference number**

ST0745

**Trailblazer reference number**

TB0036

**Title of occupation**

Glass Processor

**Trailblazer name**

Fenestration

**Core and options**

No

**Resubmission**

Yes

**Feedback from the Institute for Apprenticeships on previous submission**

Further work is required to make both occupations distinct from one another as currently they overlap significantly. If both occupations cannot be made distinct, please consider combining them into one broad occupation.

The Panel questioned whether the glass processor occupation was sufficiently broad to warrant 12 months of training. However, they thought that this might be addressed by either making the occupation distinct from or combining it with Fenestration Fabricator.

Please consider changing the title of the Fenestration Fabricator standard, as potential apprentices may not understand the term Fenestration.

**Level of occupation**

Level 2

**Route**

Engineering and Manufacturing

**Typical duration of apprenticeship**

18 months

**Target date for approval**

31 January 2019

**Occupational profile**

**Summary**

This occupation is found in Construction, Manufacturing, Automotive and Home Improvement sectors.

The broad purpose of this occupation is to create bespoke glazing products commissioned by

private clients or businesses. Glass processing involves traditional glass processing craft skills (often performed by hand) and cutting edge, high tech glass decorating solutions. These can be used to make glass safer, such as toughening or laminating glass. They can also be used to decorate glass such as changing its reflectivity or colouring it. Glass processed may be used for a variety of purposes including stained-glass windows, shower screens, balconies, windows and doors.

In their daily work, an employee in this occupation interacts with line managers and supervisors, other glass processors, stock control and works scheduling/planning departments personnel. In addition, they may interact with clients and customers in receipt of the glass for bespoke design decorative glass items. This is generally a factory/workshop based role.

An employee in this occupation will be responsible for completion of their work to set deadlines and in accordance with work instructions, maintaining a high standard of work and good quality finish. They will work on their own or as part of a team to complete work to scheduled deadlines under minimal supervision depending on the size and type of the product. For example, working as part of a team on large commercial glass units, or individually manufacturing small specialist leaded/bevelled items for decorative use.

**Typical job titles**

Typical job titles include: Glass Processor, Skilled Glass Processor, Glass Operative, Computer Numerically Controlled Machine Operator, Processing Operator.

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
Receive, check, unload and store sheet glass.	<ul style="list-style-type: none"> <li>☒ Compliance with health and safety, including manual handling and personal protective equipment (PPE)</li> <li>☒ Compliance with company procedures</li> <li>☒ Minimises damage to sheet glass</li> </ul>	<ul style="list-style-type: none"> <li>• Other functions that glass processors interact with for example surveying, processing, fabrication, dispatch, installation and engineers; their purpose and interdependencies. Internal and external customers.</li> <li>• Who they need to communicate with and when, and communication techniques; verbal and written.</li> <li>• Health and safety, including: Health &amp; 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. Risk assessments and dynamic risk assessments.</li> <li>• Safe handling, movement and storage of glass. Authority/licenses required to use moving and handling equipment such cranes, forklift trucks and manipulators. Problems or damage that can occur and avoidance methods.</li> <li>• Quality checks, when and how to complete and what to check for, for example scratches, cracks, shells, size, pattern, thickness, safety markings.</li> <li>• Types of errors that occur; reporting and rectification. Error investigation techniques.</li> <li>• Processes for handover to other functions/customers.</li> </ul>	<ul style="list-style-type: none"> <li>• Follow health and safety and environmental policy and procedures.</li> <li>• Identify risks and hazards in the workplace and control measures.</li> <li>• Interpret specifications, work instructions and job sheets.</li> <li>• Check and inspect work.</li> <li>• Communicate with colleagues and/or customers.</li> <li>• Report work outcomes and/or issues.</li> </ul>	<ul style="list-style-type: none"> <li>• Has a health &amp; safety-first attitude, for example, resists pressures to follow unsafe working practices.</li> <li>• 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.</li> <li>• Works effectively, for example, undertakes work in a reliable, tidy and productive manner.</li> </ul>

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
Identify and confirm glass processing requirements against work instructions, specifications and the production programme.	<p>☑ Correctly identifies materials and equipment to complete required glass processing</p>	<ul style="list-style-type: none"> <li>• The glass industry: glass processing’s role in the wider fenestration industry and the supply chain, and range of glass processing products.</li> <li>• The raw products used to make glass, the equipment and techniques used, and how its make up can affect it e.g. glass cracking due to nickel.</li> <li>• Types of glass including float, mirrored, laminated, toughened, sealed units and glass processing components for example space bars, perimeter seals and sealant. The features, usage and compatibility of glass and components.</li> <li>• Glass processing terminology, such as; Annealing, Edging, Forehearth, Milling, Tempering/Toughening and Weathering.</li> <li>• Specifications, work instructions and diagrams: what they include, interpretation, query/error procedures.</li> </ul>	<ul style="list-style-type: none"> <li>• Follow health and safety and environmental policy and procedures.</li> <li>• Identify risks and hazards in the workplace and control measures.</li> <li>• Interpret specifications, work instructions and job sheets.</li> <li>• Interpret diagrams, handwritten or computer generated (2D and 3D drawings or representations).</li> <li>• Select the type and quantity of materials, components and equipment required for each task.</li> <li>• Calculate the quantity of materials required to complete the job, considering wastage.</li> <li>• Communicate with colleagues and/or customers.</li> </ul>	<ul style="list-style-type: none"> <li>• Has a health &amp; safety-first attitude, for example, resists pressures to follow unsafe working practices.</li> <li>• 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.</li> <li>• Takes responsibility, for example, completes own work to required quality standards.</li> <li>• Applies logical thinking, for example, uses clear and valid reasoning when making decisions related to undertaking the work instructions.</li> </ul>

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
		<ul style="list-style-type: none"> <li>• Glass processes and methods, including polishing, drilling and sandblasting, arising (processing the edges of glass to eliminate the sharp edge), toughening.</li> <li>• The different types of machinery/equipment used in glass processing and their use, including straight line edgers, beveling machines, computer numerical control machines, Water jet cutter and arising belt. Requirements for machinery checks, adjustments, operation and shut down.</li> <li>• Computer Aided Design (CAD) in glass processing.</li> <li>• Employment rights and responsibilities including Working Time Directive, Employment Rights Act 1996. Equality and diversity considerations.</li> <li>• Continuous improvement techniques such as Plan-Do-Check-Act, Lean Manufacturing, and 5Ss (Sort, Set in Order, Shine, Standardize, Sustain).</li> </ul>		

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Operate glass moving and handling equipment, such as glass vacuum lifters, counter balance floor cranes, glazing robots, glazing manipulators and trolleys.	<ul style="list-style-type: none"> <li>☑ Compliance with health and safety, including manual handling and personal protective equipment (PPE)</li> <li>☑ Compliance with manufacturer's instructions and company procedures</li> </ul>	<ul style="list-style-type: none"> <li>• Health and safety, including: Health &amp; 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. Risk assessments and dynamic risk assessments.</li> <li>• Safe handling, movement and storage of glass. Authority/licenses required to use moving and handling equipment such cranes, forklift trucks and manipulators. Problems or damage that can occur and avoidance methods.</li> <li>• The different types of machinery/equipment used in glass processing and their use, including straight line edgers, bevelling machines, computer numerical control machines, Water jet cutter and arrising belt. Requirements for machinery checks, adjustments, operation and shut down.</li> <li>• Types of errors that occur; reporting and rectification. Error investigation techniques.</li> <li>• Processes for handover to other functions/customers.</li> </ul>	<ul style="list-style-type: none"> <li>• Follow health and safety and environmental policy and procedures.</li> <li>• Identify risks and hazards in the workplace and control measures.</li> <li>• Interpret specifications, work instructions and job sheets.</li> <li>• Complete equipment and machinery checks and adjustments; operate equipment and machinery.</li> </ul>	<ul style="list-style-type: none"> <li>• Has a health &amp; safety-first attitude, for example, resists pressures to follow unsafe working practices.</li> <li>• 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.</li> </ul>

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
Operate, check and maintain glass processing machinery such as a shape edger, gas filler and extruder.	<ul style="list-style-type: none"> <li>☑ Compliance with health and safety</li> <li>☑ Compliance with manufacturer's instructions and company procedures</li> </ul>	<ul style="list-style-type: none"> <li>Health and safety, including: Health &amp; 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. Risk assessments and dynamic risk assessments.</li> <li>Specifications, work instructions and diagrams: what they include, interpretation, query/error procedures.</li> <li>Glass processes and methods, including polishing, drilling and sandblasting, arising (processing the edges of glass to eliminate the sharp edge), toughening.</li> <li>The different types of machinery/equipment used in glass processing and their use, including straight line edgers, beveling machines, computer numerical control machines, Water jet cutter and arising belt. Requirements for machinery checks, adjustments, operation and shut down.</li> <li>Computer Aided Design (CAD) in glass processing.</li> <li>Types of errors that occur; reporting and rectification. Error investigation techniques.</li> </ul>	<ul style="list-style-type: none"> <li>Follow health and safety and environmental policy and procedures.</li> <li>Identify risks and hazards in the workplace and control measures.</li> <li>Interpret specifications, work instructions and job sheets.</li> <li>Prepare the work area and keeping it clean at all times to avoid damage.</li> <li>Complete equipment and machinery checks and adjustments; operate equipment and machinery.</li> <li>Operate computerised machinery using CNC programs, CAD or G-code to inform the machinery</li> <li>Check and inspect work.</li> <li>Investigate errors.</li> <li>Communicate with colleagues and/or customers.</li> <li>Report work outcomes and/or issues.</li> </ul>	<ul style="list-style-type: none"> <li>Has a health &amp; safety-first attitude, for example, resists pressures to follow unsafe working practices.</li> <li>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.</li> <li>Works effectively, for example, undertakes work in a reliable, tidy and productive manner.</li> <li>Applies time management, for example uses their time effectively to complete work to schedule and always arrives at, and ready to work on time.</li> <li>Adjustable when required, for example adapts to changes to work instructions or variations in workplace contexts and environments.</li> </ul>

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
<p>Prepare glass for glass processing, including checking for any imperfections or damage.</p>	<ul style="list-style-type: none"> <li>☑ Compliance with health and safety and company procedure</li> <li>☑ Minimises damage</li> <li>☑ Follow manufactures instructions when using machinery.</li> <li>☑ Ensures glass is perfect before applying any processing.</li> </ul>	<ul style="list-style-type: none"> <li>• The glass industry: glass processing's role in the wider fenestration industry and the supply chain, and range of glass processing products.</li> <li>• The raw products used to make glass, the equipment and techniques used, and how its make up can affect it e.g. glass cracking due to nickel.</li> <li>• Types of glass including float, mirrored, laminated, toughened, sealed units and glass processing components for example space bars, perimeter seals and sealant. The features, usage and compatibility of glass and components.</li> <li>• Glass processing terminology, such as; Annealing, Edging, Forehearth, Milling, Tempering/Toughening and Weathering.</li> </ul>	<ul style="list-style-type: none"> <li>• Follow health and safety and environmental policy and procedures.</li> <li>• Interpret specifications, work instructions and job sheets.</li> <li>• Interpret diagrams, handwritten or computer generated (2D and 3D drawings or representations).</li> <li>• Select the type and quantity of materials, components and equipment required for each task.</li> <li>• Calculate the quantity of materials required to complete the job, considering wastage.</li> <li>• Prepare the work area and keeping it clean at all times to avoid damage.</li> <li>• Accurately measure (for example height, length, depth and thickness) materials.</li> <li>• Identify products for re-use/re-cycling.</li> <li>• Communicate with colleagues and/or customers.</li> <li>• Report work outcomes and/or issues.</li> </ul>	<ul style="list-style-type: none"> <li>• Has a health &amp; safety-first attitude, for example, resists pressures to follow unsafe working practices.</li> <li>• 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.</li> <li>• Takes responsibility, for example, completes own work to required quality standards.</li> <li>• Applies logical thinking, for example, uses clear and valid reasoning when making decisions related to undertaking the work instructions.</li> <li>• Adjustable when required, for example adapts to changes to work instructions or variations in workplace contexts and environments.</li> </ul>

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
		<ul style="list-style-type: none"> <li>• Health and safety, including: Health &amp; 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. Risk assessments and dynamic risk assessments.</li> <li>• Safe handling, movement and storage of glass. Authority/licenses required to use moving and handling equipment such cranes, forklift trucks and manipulators. Problems or damage that can occur and avoidance methods.</li> </ul>		



Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
		<ul style="list-style-type: none"> <li>• Legislation, regulations and industry standards, including: Building regulations relevant to the glass processing industry such as; Insulated Sealed Glass Units (EN 1279), Thermally toughened soda lime silicate safety glass (EN 12150), Heat-soaked thermally-toughened soda lime silicate safety glass (EN 14179), Pendulum Test (EN 12600).</li> <li>• Environmental considerations: safe disposal of waste, minimising waste (re-use and re-cycle), waste contractors permit, energy efficiency.</li> <li>• Specifications, work instructions and diagrams: what they include, interpretation, query/error procedures.</li> <li>• Techniques for measuring, marking, cutting and drilling materials to the required size and shape, accurately, safely and economically.</li> </ul>		

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		<ul style="list-style-type: none"> <li>• Glass processes and methods, including polishing, drilling and sandblasting, arising (processing the edges of glass to eliminate the sharp edge), toughening.</li> <li>• Quality checks, when and how to complete and what to check for, for example scratches, cracks, shells, size, pattern, thickness, safety markings.</li> <li>• Types of errors that occur; reporting and rectification. Error investigation techniques.</li> <li>• Processes for handover to other functions/customers.</li> <li>• Continuous improvement techniques such as Plan-Do-Check-Act, Lean Manufacturing, and 5Ss (Sort, Set in Order, Shine, Standardise, Sustain).</li> </ul>		

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
Toughen glass using ?Furnace? machinery.	<ul style="list-style-type: none"> <li>? Compliance with manufacturer?s instructions and company procedures</li> <li>? Compliance with health and safety</li> <li>? Process glass to specification, work instructions and production programme</li> <li>? Waste and damage minimization</li> </ul>	<ul style="list-style-type: none"> <li>• Glass processing terminology, such as; Annealing, Edging, Forehearth, Milling, Tempering/Toughening and Weathering.</li> <li>• Health and safety, including: Health &amp; 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. Risk assessments and dynamic risk assessments.</li> <li>• Specifications, work instructions and diagrams: what they include, interpretation, query/error procedures.</li> <li>• Glass processes and methods, including polishing, drilling and sandblasting, arising (processing the edges of glass to eliminate the sharp edge), toughening.</li> </ul>	<ul style="list-style-type: none"> <li>• Follow health and safety and environmental policy and procedures.</li> <li>• Identify risks and hazards in the workplace and control measures.</li> <li>• Interpret specifications, work instructions and job sheets.</li> <li>• Interpret diagrams, handwritten or computer generated (2D and 3D drawings or representations).</li> <li>• Complete equipment and machinery checks and adjustments; operate equipment and machinery.</li> <li>• Operate computerised machinery using CNC programs, CAD or G-code to inform the machinery</li> <li>• Apply glass-processing techniques such as toughening and heat soak testing.</li> <li>• Check and inspect work.</li> <li>• Investigate errors.</li> </ul>	<ul style="list-style-type: none"> <li>• Has a health &amp; safety-first attitude, for example, resists pressures to follow unsafe working practices.</li> <li>• Takes responsibility, for example, completes own work to required quality standards.</li> <li>• Works effectively, for example, undertakes work in a reliable, tidy and productive manner.</li> <li>• Applies time management, for example uses their time effectively to complete work to schedule and always arrives at, and ready to work on time.</li> </ul>

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
		<ul style="list-style-type: none"> <li>• The different types of machinery/equipment used in glass processing and their use, including straight line edgers, beveling machines, computer numerical control machines, Water jet cutter and arrising belt. Requirements for machinery checks, adjustments, operation and shut down.</li> <li>• Quality checks, when and how to complete and what to check for, for example scratches, cracks, shells, size, pattern, thickness, safety markings.</li> <li>• Continuous improvement techniques such as Plan-Do-Check-Act, Lean Manufacturing, and 5Ss (Sort, Set in Order, Shine, Standardize, Sustain).</li> </ul>		

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
Heat Soak Test glass using Furnace.	<ul style="list-style-type: none"> <li>☑ Compliance with manufacturer's instructions and company procedures</li> <li>☑ Compliance with health and safety</li> <li>☑ Process glass to specification, work instructions and production programme</li> <li>☑ Waste and damage minimization</li> </ul>	<ul style="list-style-type: none"> <li>• Glass processing terminology, such as; Annealing, Edging, Forehearth, Milling, Tempering/Toughening and Weathering.</li> <li>• Health and safety, including: Health &amp; 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. Risk assessments and dynamic risk assessments.</li> <li>• Safe handling, movement and storage of glass. Authority/licenses required to use moving and handling equipment such cranes, forklift trucks and manipulators. Problems or damage that can occur and avoidance methods.</li> </ul>	<ul style="list-style-type: none"> <li>• Follow health and safety and environmental policy and procedures.</li> <li>• Identify risks and hazards in the workplace and control measures.</li> <li>• Interpret specifications, work instructions and job sheets.</li> <li>• Complete equipment and machinery checks and adjustments; operate equipment and machinery.</li> <li>• Apply glass-processing techniques such as toughening and heat soak testing.</li> <li>• Check and inspect work.</li> <li>• Investigate errors.</li> <li>• Report work outcomes and/or issues.</li> </ul>	<ul style="list-style-type: none"> <li>• Has a health &amp; safety-first attitude, for example, resists pressures to follow unsafe working practices.</li> <li>• 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.</li> <li>• Takes responsibility, for example, completes own work to required quality standards.</li> <li>• Works effectively, for example, undertakes work in a reliable, tidy and productive manner.</li> <li>• Applies time management, for example uses their time effectively to complete work to schedule and always arrives at, and ready to work on time.</li> </ul>

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
		<ul style="list-style-type: none"> <li>• Legislation, regulations and industry standards, including: Building regulations relevant to the glass processing industry such as; Insulated Sealed Glass Units (EN 1279), Thermally toughened soda lime silicate safety glass (EN 12150), Heat-soaked thermally-toughened soda lime silicate safety glass (EN 14179), Pendulum Test (EN 12600).</li> <li>• Environmental considerations: safe disposal of waste, minimizing waste (re-use and re-cycle), waste contractors permit, energy efficiency.</li> <li>• Glass processes and methods, including polishing, drilling and sandblasting, arising (processing the edges of glass to eliminate the sharp edge), toughening.</li> <li>• The different types of machinery/equipment used in glass processing and their use, including straight line edgers, beveling machines, computer numerical control machines, Water jet cutter and arising belt. Requirements for machinery checks, adjustments, operation and shut down.</li> <li>• Quality checks, when and how to complete and what to check for, for example scratches, cracks, shells, size, pattern, thickness, safety markings.</li> <li>• Types of errors that occur; reporting and rectification. Error investigation techniques.</li> <li>• Processes for handover to other functions/customers.</li> </ul>		

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Enhance glass with additional products.	<ul style="list-style-type: none"> <li>☑ Compliance with health and safety</li> <li>☑ Compliance with manufacturer's instructions and company procedures</li> <li>☑ Process glass to specification, work instructions and production programme</li> <li>☑ Waste and damage minimization</li> </ul>	<ul style="list-style-type: none"> <li>• The glass industry: glass processing's role in the wider fenestration industry and the supply chain, and range of glass processing products.</li> <li>• Legislation, regulations and industry standards, including: Building regulations relevant to the glass processing industry such as; Insulated Sealed Glass Units (EN 1279), Thermally toughened soda lime silicate safety glass (EN 12150), Heat-soaked thermally-toughened soda lime silicate safety glass (EN 14179), Pendulum Test (EN 12600).</li> <li>• Environmental considerations: safe disposal of waste, minimizing waste (re-use and re-cycle), waste contractors permit, energy efficiency.</li> <li>• Specifications, work instructions and diagrams: what they include, interpretation, query/error procedures.</li> <li>• The various types of coatings or insulates to improve performance of glass.</li> <li>• Quality checks, when and how to complete and what to check for, for example scratches, cracks, shells, size, pattern, thickness, safety markings.</li> <li>• Types of errors that occur; reporting and rectification. Error investigation techniques.</li> <li>• Processes for handover to other functions/customers.</li> </ul>	<ul style="list-style-type: none"> <li>• Interpret specifications, work instructions and job sheets.</li> <li>• Interpret diagrams, handwritten or computer generated (2D and 3D drawings or representations).</li> <li>• Select the type and quantity of materials, components and equipment required for each task.</li> <li>• Calculate the quantity of materials required to complete the job, considering wastage.</li> <li>• Prepare the work area and keeping it clean at all times to avoid damage.</li> <li>• Accurately measure (for example height, length, depth and thickness) materials.</li> <li>• Check and inspect work.</li> <li>• Investigate errors.</li> <li>• Identify products for re-use/re-cycling.</li> <li>• Remove material waste and scrap from the work area; identify different types of waste.</li> </ul>	<ul style="list-style-type: none"> <li>• Has a health &amp; safety-first attitude, for example, resists pressures to follow unsafe working practices.</li> <li>• 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.</li> <li>• Takes responsibility, for example, completes own work to required quality standards.</li> <li>• Applies time management, for example uses their time effectively to complete work to schedule and always arrives at, and ready to work on time.</li> </ul>

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Engrave glass using a glass laser engraving machine or hand tools	<ul style="list-style-type: none"> <li>☑ Compliance with health and safety</li> <li>☑ Compliance with manufacturer's instructions and company procedures</li> <li>☑ Process glass to specification, work instructions and production programme</li> <li>☑ Waste and damage minimization</li> </ul>	<ul style="list-style-type: none"> <li>• Other functions that glass processors interact with for example surveying, processing, fabrication, dispatch, installation and engineers; their purpose and interdependencies. Internal and external customers.</li> <li>• Who they need to communicate with and when, and communication techniques; verbal and written.</li> <li>• Limits of autonomy; reporting channels.</li> <li>• Health and safety, including: Health &amp; 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. Risk assessments and dynamic risk assessments.</li> </ul>	<ul style="list-style-type: none"> <li>• Follow health and safety and environmental policy and procedures.</li> <li>• Identify risks and hazards in the workplace and control measures.</li> <li>• Select the type and quantity of materials, components and equipment required for each task.</li> <li>• Prepare the work area and keeping it clean at all times to avoid damage.</li> <li>• Accurately measure (for example height, length, depth and thickness) materials.</li> <li>• Use manual methods, for example cutting, drilling and hand polishing.</li> <li>• Apply decorative processes to glass such as acid etching and sand blasting.</li> <li>• Check and inspect work.</li> <li>• Remove material waste and scrap from the work area; identify different types of waste.</li> <li>• Communicate with colleagues and/or customers.</li> <li>• Report work outcomes and/or issues.</li> </ul>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Takes responsibility, for example, completes own work to required quality standards.</li> <li>• Applies logical thinking, for example, uses clear and valid reasoning when making decisions related to undertaking the work instructions.</li> <li>• Works effectively, for example, undertakes work in a reliable, tidy and productive manner.</li> <li>• Applies time management, for example uses their time effectively to complete work to schedule and always arrives at, and ready to work on time.</li> </ul>



Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
		<ul style="list-style-type: none"> <li>• Safe handling, movement and storage of glass. Authority/licenses required to use moving and handling equipment such cranes, forklift trucks and manipulators. Problems or damage that can occur and avoidance methods.</li> <li>• Specifications, work instructions and diagrams: what they include, interpretation, query/error procedures.</li> <li>• Glass processes and methods, including polishing, drilling and sandblasting, arising (processing the edges of glass to eliminate the sharp edge), toughening.</li> <li>• The different types of machinery/equipment used in glass processing and their use, including straight line edgers, beveling machines, computer numerical control machines, Water jet cutter and arising belt. Requirements for machinery checks, adjustments, operation and shut down.</li> <li>• Computer Aided Design (CAD) in glass processing.</li> <li>• Contractual arrangements, for example penalty clauses. Consumer rights - fit for purpose and as described. How the role contributes to commercial operations.</li> </ul>		<ul style="list-style-type: none"> <li>• Adjustable when required, for example adapts to changes to work instructions or variations in workplace contexts and environments.</li> </ul>

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
Apply lead/decorating work using lead came or decorative strips.	<ul style="list-style-type: none"> <li>☑ Compliance with health and safety</li> <li>☑ Compliance with manufacturer's instructions and company procedures</li> <li>☑ Process glass to specification, work instructions and production programme</li> <li>☑ Waste and damage minimization</li> </ul>	<ul style="list-style-type: none"> <li>• Types of glass including float, mirrored, laminated, toughened, sealed units and glass processing components for example space bars, perimeter seals and sealant. The features, usage and compatibility of glass and components.</li> <li>• Glass processing terminology, such as; Annealing, Edging, Forehearth, Milling, Tempering/Toughening and Weathering.</li> <li>• Health and safety, including: Health &amp; 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. Risk assessments and dynamic risk assessments.</li> </ul>	<ul style="list-style-type: none"> <li>• Follow health and safety and environmental policy and procedures.</li> <li>• Identify risks and hazards in the workplace and control measures.</li> <li>• Interpret specifications, work instructions and job sheets.</li> <li>• Interpret diagrams, handwritten or computer generated (2D and 3D drawings or representations).</li> <li>• Select the type and quantity of materials, components and equipment required for each task.</li> <li>• Calculate the quantity of materials required to complete the job, considering wastage.</li> <li>• Prepare the work area and keeping it clean at all times to avoid damage.</li> <li>• Accurately measure (for example height, length, depth and thickness) materials.</li> <li>• Use manual methods, for example cutting, drilling and hand polishing.</li> <li>• Check and inspect work.</li> </ul>	<ul style="list-style-type: none"> <li>• Has a health &amp; safety-first attitude, for example, resists pressures to follow unsafe working practices.</li> <li>• Takes responsibility, for example, completes own work to required quality standards.</li> <li>• Applies logical thinking, for example, uses clear and valid reasoning when making decisions related to undertaking the work instructions.</li> <li>• Works effectively, for example, undertakes work in a reliable, tidy and productive manner.</li> <li>• Applies time management, for example uses their time effectively to complete work to schedule and always arrives at, and ready to work on time.</li> <li>• Adjustable when required, for example adapts to changes to work instructions or variations in workplace contexts and environments.</li> </ul>

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
		<ul style="list-style-type: none"> <li>• Specifications, work instructions and diagrams: what they include, interpretation, query/error procedures.</li> <li>• Techniques for measuring, marking, cutting and drilling materials to the required size and shape, accurately, safely and economically.</li> <li>• Glass processes and methods, including polishing, drilling and sandblasting, arising (processing the edges of glass to eliminate the sharp edge), toughening.</li> <li>• Requirements for fitting of space bars, application of sealant/seals and installation of decorative finishes lead, bars etc.</li> <li>• Quality checks, when and how to complete and what to check for, for example scratches, cracks, shells, size, pattern, thickness, safety markings.</li> <li>• Types of errors that occur; reporting and rectification. Error investigation techniques.</li> <li>• Processes for handover to other functions/customers.</li> <li>• Continuous improvement techniques such as Plan-Do-Check-Act, Lean Manufacturing, and 5Ss (Sort, Set in Order, Shine, Standardise, Sustain).</li> </ul>	<ul style="list-style-type: none"> <li>• Identify products for re-use/re-cycling.</li> <li>• Remove material waste and scrap from the work area; identify different types of waste.</li> </ul>	

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
Process glass by sandblasting.	<ul style="list-style-type: none"> <li>☑ Compliance with health and safety</li> <li>☑ Compliance with manufacturer's instructions and company procedures</li> <li>☑ Process glass to specification, work instructions and production programme</li> <li>☑ Waste and damage minimisation</li> </ul>	<ul style="list-style-type: none"> <li>• Types of glass including float, mirrored, laminated, toughened, sealed units and glass processing components for example space bars, perimeter seals and sealant. The features, usage and compatibility of glass and components.</li> <li>• Glass processing terminology, such as; Annealing, Edging, Forehearth, Milling, Tempering/Toughening and Weathering.</li> <li>• Safe handling, movement and storage of glass. Authority/licenses required to use moving and handling equipment such cranes, forklift trucks and manipulators. Problems or damage that can occur and avoidance methods.</li> <li>• Specifications, work instructions and diagrams: what they include, interpretation, query/error procedures.</li> </ul>	<ul style="list-style-type: none"> <li>• Follow health and safety and environmental policy and procedures.</li> <li>• Identify risks and hazards in the workplace and control measures.</li> <li>• Interpret specifications, work instructions and job sheets.</li> <li>• Interpret diagrams, handwritten or computer generated (2D and 3D drawings or representations).</li> <li>• Prepare the work area and keeping it clean at all times to avoid damage.</li> <li>• Complete equipment and machinery checks and adjustments; operate equipment and machinery.</li> <li>• Apply decorative processes to glass such as acid etching and sand blasting.</li> <li>• Check and inspect work.</li> <li>• Communicate with colleagues and/or customers.</li> <li>• Report work outcomes and/or issues.</li> </ul>	<ul style="list-style-type: none"> <li>• Has a health &amp; safety-first attitude, for example, resists pressures to follow unsafe working practices.</li> <li>• Takes responsibility, for example, completes own work to required quality standards.</li> <li>• Applies logical thinking, for example, uses clear and valid reasoning when making decisions related to undertaking the work instructions.</li> <li>• Works effectively, for example, undertakes work in a reliable, tidy and productive manner.</li> <li>• Applies time management, for example uses their time effectively to complete work to schedule and always arrives at, and ready to work on time.</li> </ul>

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
		<ul style="list-style-type: none"> <li>• Glass processes and methods, including polishing, drilling and sandblasting, arising (processing the edges of glass to eliminate the sharp edge), toughening.</li> <li>• The different types of machinery/equipment used in glass processing and their use, including straight line edgers, beveling machines, computer numerical control machines, Water jet cutter and arising belt. Requirements for machinery checks, adjustments, operation and shut down.</li> <li>• Computer Aided Design (CAD) in glass processing.</li> <li>• Quality checks, when and how to complete and what to check for, for example scratches, cracks, shells, size, pattern, thickness, safety markings.</li> <li>• Types of errors that occur; reporting and rectification. Error investigation techniques.</li> <li>• Processes for handover to other functions/customers.</li> </ul>		

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
Process glass by acid etching	<ul style="list-style-type: none"> <li>☑ Compliance with health and safety</li> <li>☑ Compliance with manufacturer's instructions and company procedures</li> <li>☑ Process glass to specification, work instructions and production programme</li> <li>☑ Waste and damage minimisation</li> </ul>	<ul style="list-style-type: none"> <li>• Types of glass including float, mirrored, laminated, toughened, sealed units and glass processing components for example space bars, perimeter seals and sealant. The features, usage and compatibility of glass and components.</li> <li>• Glass processing terminology, such as; Annealing, Edging, Forehearth, Milling, Tempering/Toughening and Weathering.</li> <li>• Safe handling, movement and storage of glass. Authority/licenses required to use moving and handling equipment such cranes, forklift trucks and manipulators. Problems or damage that can occur and avoidance methods.</li> <li>• Specifications, work instructions and diagrams: what they include, interpretation, query/error procedures.</li> </ul>	<ul style="list-style-type: none"> <li>• Follow health and safety and environmental policy and procedures.</li> <li>• Identify risks and hazards in the workplace and control measures.</li> <li>• Interpret specifications, work instructions and job sheets.</li> <li>• Interpret diagrams, handwritten or computer generated (2D and 3D drawings or representations).</li> <li>• Prepare the work area and keeping it clean at all times to avoid damage.</li> <li>• Complete equipment and machinery checks and adjustments; operate equipment and machinery.</li> <li>• Apply decorative processes to glass such as acid etching and sand blasting.</li> <li>• Check and inspect work.</li> <li>• Communicate with colleagues and/or customers.</li> <li>• Report work outcomes and/or issues.</li> </ul>	<ul style="list-style-type: none"> <li>• Has a health &amp; safety-first attitude, for example, resists pressures to follow unsafe working practices.</li> <li>• 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.</li> <li>• Takes responsibility, for example, completes own work to required quality standards.</li> <li>• Applies logical thinking, for example, uses clear and valid reasoning when making decisions related to undertaking the work instructions.</li> <li>• Works effectively, for example, undertakes work in a reliable, tidy and productive manner.</li> </ul>

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
		<ul style="list-style-type: none"> <li>• Glass processes and methods, including polishing, drilling and sandblasting, arising (processing the edges of glass to eliminate the sharp edge), toughening.</li> <li>• The different types of machinery/equipment used in glass processing and their use, including straight line edgers, beveling machines, computer numerical control machines, Water jet cutter and arising belt. Requirements for machinery checks, adjustments, operation and shut down.</li> <li>• Quality checks, when and how to complete and what to check for, for example scratches, cracks, shells, size, pattern, thickness, safety markings.</li> <li>• Types of errors that occur; reporting and rectification. Error investigation techniques.</li> <li>• Processes for handover to other functions/customers.</li> </ul>		<ul style="list-style-type: none"> <li>• Applies time management, for example uses their time effectively to complete work to schedule and always arrives at, and ready to work on time.</li> </ul>

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
Process raw edges of glass (arrising and edge polishing, edge deletion of solar control films for structural glazed unit manufacture).	<ul style="list-style-type: none"> <li>☑ Compliance with health and safety</li> <li>☑ Compliance with manufacturer's instructions and company procedures</li> <li>☑ Process glass to specification, work instructions and production programme</li> <li>☑ Waste and damage minimization</li> </ul>	<ul style="list-style-type: none"> <li>• Glass processing terminology, such as; Annealing, Edging, Forehearth, Milling, Tempering/Toughening and Weathering.</li> <li>• Health and safety, including: Health &amp; 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. Risk assessments and dynamic risk assessments.</li> <li>• Safe handling, movement and storage of glass. Authority/licenses required to use moving and handling equipment such cranes, forklift trucks and manipulators. Problems or damage that can occur and avoidance methods.</li> </ul>	<ul style="list-style-type: none"> <li>• Follow health and safety and environmental policy and procedures.</li> <li>• Identify risks and hazards in the workplace and control measures.</li> <li>• Interpret specifications, work instructions and job sheets.</li> <li>• Interpret diagrams, handwritten or computer generated (2D and 3D drawings or representations).</li> <li>• Select the type and quantity of materials, components and equipment required for each task.</li> <li>• Prepare the work area and keeping it clean at all times to avoid damage.</li> <li>• Complete equipment and machinery checks and adjustments; operate equipment and machinery.</li> <li>• Process glass by arrising or polishing to eliminate the sharp edges of glass.</li> <li>• Check and inspect work.</li> <li>• Investigate errors.</li> </ul>	<ul style="list-style-type: none"> <li>• Has a health &amp; safety-first attitude, for example, resists pressures to follow unsafe working practices.</li> <li>• Takes responsibility, for example, completes own work to required quality standards.</li> <li>• Applies logical thinking, for example, uses clear and valid reasoning when making decisions related to undertaking the work instructions.</li> <li>• Works effectively, for example, undertakes work in a reliable, tidy and productive manner.</li> <li>• Applies time management, for example uses their time effectively to complete work to schedule and always arrives at, and ready to work on time.</li> </ul>



Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
		<ul style="list-style-type: none"> <li>• Specifications, work instructions and diagrams: what they include, interpretation, query/error procedures.</li> <li>• Glass processes and methods, including polishing, drilling and sandblasting, arising (processing the edges of glass to eliminate the sharp edge), toughening.</li> <li>• The different types of machinery/equipment used in glass processing and their use, including straight line edgers, beveling machines, computer numerical control machines, Water jet cutter and arising belt. Requirements for machinery checks, adjustments, operation and shut down.</li> <li>• Computer Aided Design (CAD) in glass processing.</li> <li>• Quality checks, when and how to complete and what to check for, for example scratches, cracks, shells, size, pattern, thickness, safety markings.</li> <li>• Types of errors that occur; reporting and rectification. Error investigation techniques.</li> <li>• Processes for handover to other functions/customers.</li> </ul>		

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
Polish, ensuring a good quality product free from defeats.	<ul style="list-style-type: none"> <li>☑ Compliance with health and safety and company procedure</li> <li>☑ Product free of defects</li> <li>☑ Crystal Clear finished product</li> <li>☑ Finished product according to production programme.</li> </ul>	<ul style="list-style-type: none"> <li>• The glass industry: glass processing's role in the wider fenestration industry and the supply chain, and range of glass processing products.</li> <li>• The raw products used to make glass, the equipment and techniques used, and how its make up can affect it e.g. glass cracking due to nickel.</li> <li>• Other functions that glass processors interact with for example surveying, processing, fabrication, dispatch, installation and engineers; their purpose and interdependencies. Internal and external customers.</li> <li>• Who they need to communicate with and when, and communication techniques; verbal and written.</li> <li>• Types of glass including float, mirrored, laminated, toughened, sealed units and glass processing components for example space bars, perimeter seals and sealant. The features, usage and compatibility of glass and components.</li> <li>• Health and safety, including: Health &amp; 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. Risk assessments and dynamic risk assessments.</li> </ul>	<ul style="list-style-type: none"> <li>• Prepare the work area and keeping it clean at all times to avoid damage.</li> <li>• Use manual methods, for example cutting, drilling and hand polishing.</li> <li>• Check and inspect work.</li> <li>• Report work outcomes and/or issues.</li> </ul>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Takes responsibility, for example, completes own work to required quality standards.</li> <li>• Applies logical thinking, for example, uses clear and valid reasoning when making decisions related to undertaking the work instructions.</li> <li>• Works effectively, for example, undertakes work in a reliable, tidy and productive manner.</li> <li>• Applies time management, for example uses their time effectively to complete work to schedule and always arrives at, and ready to work on time.</li> <li>• Adjustable when required, for example adapts to changes to work instructions or variations in workplace contexts and environments.</li> </ul>

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
		<ul style="list-style-type: none"> <li>• Safe handling, movement and storage of glass. Authority/licenses required to use moving and handling equipment such cranes, forklift trucks and manipulators. Problems or damage that can occur and avoidance methods.</li> <li>• Glass processes and methods, including polishing, drilling and sandblasting, arising (processing the edges of glass to eliminate the sharp edge), toughening.</li> <li>• Quality checks, when and how to complete and what to check for, for example scratches, cracks, shells, size, pattern, thickness, safety markings.</li> <li>• Continuous improvement techniques such as Plan-Do-Check-Act, Lean Manufacturing, and 5Ss (Sort, Set in Order, Shine, Standardise, Sustain).</li> </ul>		

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
Cut and/or drill processed or unprocessed glass to a specific dimension on an auto line-cutting machine and break out.	<ul style="list-style-type: none"> <li>☑ Compliance with health and safety and company procedure</li> <li>☑ Follow manufacturer's instructions when using machinery</li> <li>☑ Interpret specifications and follow designs to cut glass.</li> <li>☑ Select correct glass from stock area and safely load glass onto cutting tables.</li> <li>☑ Utilise batching/optimisation sheets to reduce waste and maximise yield.</li> <li>☑ Ensure all cut offs from stock sheets are safely and efficiently stored for recycling.</li> <li>☑ Ensure the work sheets are fulfilled to specification and programmed for onward movement to the next step in processing.</li> </ul>	<ul style="list-style-type: none"> <li>• Health and safety, including: Health &amp; 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. Risk assessments and dynamic risk assessments.</li> <li>• Safe handling, movement and storage of glass. Authority/licenses required to use moving and handling equipment such cranes, forklift trucks and manipulators. Problems or damage that can occur and avoidance methods.</li> <li>• Environmental considerations: safe disposal of waste, minimizing waste (re-use and re-cycle), waste contractors permit, energy efficiency.</li> </ul>	<ul style="list-style-type: none"> <li>• Select the type and quantity of materials, components and equipment required for each task.</li> <li>• Calculate the quantity of materials required to complete the job, considering wastage.</li> <li>• Prepare the work area and keeping it clean at all times to avoid damage.</li> <li>• Operate computerised machinery using CNC programs, CAD or G-code to inform the machinery</li> <li>• Check and inspect work.</li> <li>• Report work outcomes and/or issues.</li> </ul>	<ul style="list-style-type: none"> <li>• Has a health &amp; safety-first attitude, for example, resists pressures to follow unsafe working practices.</li> <li>• 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.</li> <li>• Applies time management, for example uses their time effectively to complete work to schedule and always arrives at, and ready to work on time.</li> </ul>

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
		<ul style="list-style-type: none"> <li>• Specifications, work instructions and diagrams: what they include, interpretation, query/error procedures.</li> <li>• Techniques for measuring, marking, cutting and drilling materials to the required size and shape, accurately, safely and economically.</li> <li>• The different types of machinery/equipment used in glass processing and their use, including straight line edgers, beveling machines, computer numerical control machines, Water jet cutter and arrising belt. Requirements for machinery checks, adjustments, operation and shut down.</li> <li>• Computer Aided Design (CAD) in glass processing.</li> <li>• Quality checks, when and how to complete and what to check for, for example scratches, cracks, shells, size, pattern, thickness, safety markings.</li> <li>• Types of errors that occur; reporting and rectification. Error investigation techniques.</li> </ul>		

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
Cut processed or unprocessed glass into specific shapes and drill any required holes using hand or power tools.	<ul style="list-style-type: none"> <li>☑ Compliance with health and safety and company procedure</li> <li>☑ Follow manufacturer's instructions when using machinery</li> <li>☑ Interpret specifications and follow designs to cut glass.</li> <li>☑ Select correct glass from stock area and safely load glass onto cutting tables.</li> <li>☑ Utilise batching/optimisation sheets to reduce waste and maximise yield.</li> <li>☑ Ensure all cut offs from stock sheets are safely and efficiently stored for recycling.</li> <li>☑ Ensure the work sheets are fulfilled to specification and programmed for onward movement to the next step in processing.</li> </ul>	<ul style="list-style-type: none"> <li>• Health and safety, including: Health &amp; 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. Risk assessments and dynamic risk assessments.</li> <li>• Safe handling, movement and storage of glass. Authority/licenses required to use moving and handling equipment such as cranes, forklift trucks and manipulators. Problems or damage that can occur and avoidance methods.</li> <li>• Environmental considerations: safe disposal of waste, minimizing waste (re-use and re-cycle), waste contractors permit, energy efficiency.</li> </ul>	<ul style="list-style-type: none"> <li>• Select the type and quantity of materials, components and equipment required for each task.</li> <li>• Calculate the quantity of materials required to complete the job, considering wastage.</li> <li>• Prepare the work area and keep it clean at all times to avoid damage.</li> <li>• Accurately measure (for example height, length, depth and thickness) materials.</li> <li>• Calculate spacing of holes and/or cutouts.</li> <li>• Mark, cut and/or drill glass.</li> <li>• Complete equipment and machinery checks and adjustments; operate equipment and machinery.</li> <li>• Use manual methods, for example cutting, drilling and hand polishing.</li> <li>• Check and inspect work.</li> <li>• Remove material waste and scrap from the work area; identify different types of waste.</li> <li>• Report work outcomes and/or issues.</li> </ul>	<ul style="list-style-type: none"> <li>• Has a health &amp; safety-first attitude, for example, resists pressures to follow unsafe working practices.</li> <li>• 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.</li> <li>• Takes responsibility, for example, completes own work to required quality standards.</li> <li>• Applies logical thinking, for example, uses clear and valid reasoning when making decisions related to undertaking the work instructions.</li> <li>• Works effectively, for example, undertakes work in a reliable, tidy and productive manner.</li> </ul>

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
		<ul style="list-style-type: none"> <li>Specifications, work instructions and diagrams: what they include, interpretation, query/error procedures.</li> <li>Techniques for measuring, marking, cutting and drilling materials to the required size and shape, accurately, safely and economically.</li> <li>Quality checks, when and how to complete and what to check for, for example scratches, cracks, shells, size, pattern, thickness, safety markings.</li> <li>Types of errors that occur; reporting and rectification. Error investigation techniques.</li> </ul>		<ul style="list-style-type: none"> <li>Applies time management, for example uses their time effectively to complete work to schedule and always arrives at, and ready to work on time.</li> <li>Adjustable when required, for example adapts to changes to work instructions or variations in workplace contexts and environments.</li> </ul>
<p>Make insulated glass units.</p>	<ul style="list-style-type: none"> <li>☒ Understand the benefits of triple glazed units compared to double.</li> <li>☒ Use, check and maintain the machinery involved (Liseq, Bystronic etc.) following manufacturers/employers instructions.</li> <li>☒ Produce units in accordance with works instructions/specification and to agreed production programme.</li> </ul>	<ul style="list-style-type: none"> <li>Safe handling, movement and storage of glass. Authority/licenses required to use moving and handling equipment such cranes, forklift trucks and manipulators. Problems or damage that can occur and avoidance methods.</li> <li>Legislation, regulations and industry standards, including: Building regulations relevant to the glass processing industry such as; Insulated Sealed Glass Units (EN 1279), Thermally toughened soda lime silicate safety glass (EN 12150), Heat-soaked thermally-toughened soda lime silicate safety glass (EN 14179), Pendulum Test (EN 12600).</li> <li>Environmental considerations: safe disposal of waste, minimizing waste (re-use and re-cycle), waste contractors permit, energy efficiency.</li> </ul>	<ul style="list-style-type: none"> <li>Interpret specifications, work instructions and job sheets.</li> <li>Interpret diagrams, handwritten or computer generated (2D and 3D drawings or representations).</li> <li>Select the type and quantity of materials, components and equipment required for each task.</li> <li>Calculate the quantity of materials required to complete the job, considering wastage.</li> <li>Prepare the work area and keeping it clean at all times to avoid damage.</li> <li>Accurately measure (for example height, length, depth and thickness) materials.</li> <li>Complete equipment and machinery checks and adjustments; operate equipment and machinery.</li> <li>Check and inspect work.</li> <li>Investigate errors.</li> </ul>	<ul style="list-style-type: none"> <li>Has a health &amp; safety-first attitude, for example, resists pressures to follow unsafe working practices.</li> <li>Works effectively, for example, undertakes work in a reliable, tidy and productive manner.</li> <li>Applies time management, for example uses their time effectively to complete work to schedule and always arrives at, and ready to work on time.</li> </ul>

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
		<ul style="list-style-type: none"> <li>• Requirements for fitting of space bars, application of sealant/seals and installation of decorative finishes lead, bars etc.</li> <li>• The different types of machinery/equipment used in glass processing and their use, including straight line edgers, beveling machines, computer numerical control machines, Water jet cutter and arrising belt. Requirements for machinery checks, adjustments, operation and shut down.</li> <li>• Quality checks, when and how to complete and what to check for, for example scratches, cracks, shells, size, pattern, thickness, safety markings.</li> <li>• Types of errors that occur; reporting and rectification. Error investigation techniques.</li> <li>• Processes for handover to other functions/customers.</li> <li>• Contractual arrangements, for example penalty clauses. Consumer rights - fit for purpose and as described. How the role contributes to commercial operations.</li> <li>• Continuous improvement techniques such as Plan-Do-Check-Act, Lean Manufacturing, and 5Ss (Sort, Set in Order, Shine, Standardise, Sustain).</li> </ul>		



Duty	Training requirement	Method of delivery	Provider type	OTJ days
Receive, check, unload and store sheet glass.				6
Identify and confirm glass processing requirements against work instructions, specifications and the production programme.				3
Operate glass moving and handling equipment, such as glass vacuum lifters, counter balance floor cranes, glazing robots, glazing manipulators and trolleys.				4
Operate, check and maintain glass processing machinery such as a shape edger, gas filler and extruder.				10
Prepare glass for glass processing, including checking for any imperfections or damage.				6
Toughen glass using ?Furnace? machinery.				4
Heat Soak Test glass using ?Furnace.?				4
Enhance glass with additional products.				5
Engrave glass using a glass laser engraving machine or hand tools				5
Apply lead/decorating work using lead came or decorative strips.				5
Process glass by sandblasting.				6
Process glass by acid etching				6
Process raw edges of glass (arrising and edge polishing, edge deletion of solar control films for structural glazed unit manufacture).				3
Polish, ensuring a good quality product free from defeats.				4
Cut and/or drill processed or unprocessed glass to a specific dimension on an auto line-cutting machine and break out.				4
Cut processed or unprocessed glass into specific shapes and drill any required holes using hand or power tools.				4
Make insulated glass units.				0

### Entry requirements

No entry requirements specified

### Professional recognition

No professional body recognition specified

### Trailblazer membership details

#### Chair

Katie Thornton (The Window Company Ltd)

#### Facilitator

Thomas Jeavons (Sunray Construction)

#### Employer members

Name	Employer
Aaron Petersen	UK Glass Force
Andy Clegg	Safestyle
Chris Costall	Nationwide Windows
Darren Wright	Anglian Home Improvements
David Leighton-Berry	Eurocell
Derren Gittins	Synseal/Global Glass
Gareth Jones	Rehau
Jennifer Dinnis	Saint Gobain
John Mannell	Prentice Glass
Karen Lund	Independent Network (Veka)
Mark Knight	Cornwall Glass & Glazing
mark Smith	Everest
Mark Wadsworth	SAS (Senior Architectural Systems)
Michael Ings	VPS Evander
Neil Powell	Continental Installations
Paul Yeo	Comar Architectural Aluminium Systems (Parkside Group)
Tony Powell	SAS (Senior Architectural Systems)

#### Other members

Name	Employer
Chris Mayne	Corgi
Clive Gibbs	CERTASS
Daryl Evans	Total Support Training
Jim Swainston	Northern Skills Group
Justin Ratcliffe	Council for Aluminium in Building

## Additional information (continued)

Name	Employer
Mick Clayton	GQA Qualifications
Paul Gray	The Vocational College
Rachel Culpan	FENSA
Richard Hearn	GGF