# Fabrication of Glass Supporting Systems

# National Occupational Standards

# Draft

Functional Map

This project will review the National Occupational Standards for specific job roles and functions associated with Fabrication of Glass Supporting Systems. It is aimed at those who undertake work to produce fabricated products such as door and window frames and units, conservatories, and glazing systems used in curtain walling etc. The table below covers all functions involved.

|  |  |  |  |
| --- | --- | --- | --- |
| **Role/Area** | **Key Activity** | **URN** | **NOS Title** |
| Operator Duties | Health and safety | GQAPGSF1 | Maintain health and safety within the production of glass supporting fabrications working environment |
| Team work | GQAPGSF2 | Contribute to the work of others in the production of glass supporting fabrications |
| Set up and operate equipment | GQAPGSF3 | Prepare and operate equipment / machinery / tools in the production of glass supporting fabrications |
| Handle materials | GQAPGSF4 | Handle materials or components in the production of glass supporting fabrications |
| Optional Operator Duties | Processing | GQAPGSF5 | Process products and materials by applying coatings or treatments in the production of glass supporting fabrications |
| Storage and delivery | GQAPGSF6 | Prepare products for storage and delivery in the production of glass supporting fabrications |
| Joining | GQAPGSF8 | Fabricate glass framing systems by joining |
| Assembly | GQAPGSF9 | Fabricate glass framing systems by assembly |
| Quality assurance | GQAPGSF20 | Check the quality of products used in the fabrication of glass supporting systems |
| Cutting | GQAPGSF21 | Fabricate glass framing systems by cutting |
| Preparing materials | GQAPGSF22 | Fabricate glass framing systems by preparing materials |
| Senior Operator Duties | Health and safety | GQAPGSF10 | Promote and maintain health and safety within the production of glass supporting fabrications working environment |
| Improve organisation | GQAPGSF11 | Improve the work of the organisation in the production of glass supporting fabrications |
| Optional Senior Operator Duties | Set up and operate equipment | GQAPGSF3 | Prepare and operate equipment/machinery/tools in the production of glass supporting fabrications |
| GQAPGSF16 | Set up equipment for operations in the production of glass supporting fabrications |
| Apply coatings and treatments | GQAPGSF5 | Process products and materials by applying coatings or treatments in the production of glass supporting fabrications |
| Complex fabrication | GQAPGSF17 | Fabricate complex glass framing systems |
| Control operations | GQAPGSF18 | Control fabrication operations |
| Joining | GQAPGSF8 | Fabricate glass framing systems by joining |
| Assembly | GQAPGSF 9 | Fabricate glass framing systems by assembly |
| Cutting | GQAPGSF21 | Fabricate glass framing systems by cutting |
| Preparing materials | GQAPGSF22 | Fabricate glass framing systems by preparing materials |
| Problems | GQAPGSF13 | Diagnose and rectify technical problems in the production of glass supporting fabrications |
| Develop procedures | GQAPGSF15 | Develop new work procedures in the production of glass supporting fabrications |
| Plan resources | GQAPGSF14 | Plan the use of resources to meet work requirements in the production of glass supporting fabrications |
| Quality assurance | GQAPGSF12 | Assess the quality of glass-related materials/components in the production of glass supporting fabrications |
| GQAPGSF20 | Check the quality of products used in the fabrication of glass supporting systems |

### GQAPGSF1 Maintain health and safety within the production of glass supporting fabrications working environment

### Overview

This standard covers the skills and knowledge needed to meet the broad requirements of health and safety within the production of glass supporting fabrications working environment. It deals mainly with preventative activities. It covers the need to follow health and safety guidelines and ensuring that the work area is free from hazards. It also deals with coping in an emergency. You are expected to ensure that medical assistance is summoned, and that the emergency services are called where necessary.

### Outcomes

|  |  |
| --- | --- |
| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. follow regulations and guidelines for health and safety protection at all times 2. check immediate work area is free from health and safety hazards 3. identify any health and safety hazards promptly and report them to an appropriate authority 4. take suitable action to prevent harm to individuals 5. adopt safe working practices 6. use safety equipment and personal protective equipment following manufacturers instructions 7. use of equipment and materials following manufacturers’ and other relevant instructions 8. inform visitors to work areas of health and safety procedures 9. prevent unauthorised access to hazardous and dangerous areas 10. summon medical assistance in the event of any injury or potential injury to others 11. give priority to the prevention of injury to people over damage to property 12. carry out emergency procedures following standard operating procedures 13. confirm emergency equipment is applied by trained personnel wherever possible 14. report accidents and emergencies in the appropriate information systems | 1. relevant health and safety regulations and guidelines 2. health and safety hazards found in the workplace 3. who should be informed of health and safety hazards 4. safe and unsafe working practices 5. safety equipment and personal protective equipment used in different situations 6. types of injuries that could occur 7. how to summon medical assistance 8. qualified first-aiders available 9. standard operating procedures for different types of emergency 10. how to alert the emergency services, and what type of information will need to be provided 11. evacuation procedures for workers and visitors, and where should people gather 12. who is authorised to enter dangerous areas 13. accident reporting procedures 14. how to carry out risk assessments 15. where to obtain information on the safe use of equipment 16. equipment used for different types of emergency 17. who is authorised to use the emergency equipment 18. health and safety procedures for visitors 19. information systems used 20. why it is important to use the information systems |

### Scope/range

1 Equipment can include:

1.1 saws

1.2 welders

1.3 hand tools

1.4 handling equipment

1.5 storage equipment

1.6 fire extinguishers

### GQAPGSF2 Contribute to the work of others in the production of glass supporting fabrications

### Overview

This standard covers the skills and knowledge needed to go beyond the immediate requirements of the job, and to view work as more than just utilising technical skills. It covers the need to keep costs down by minimising the wastage of resources that are used during the work. It is important that equipment is used economically, that components are not damaged, and that materials are used in the correct quantities. Surplus materials are retained wherever possible. It is also concerned with obtaining and providing information to ensure that people have all the information required to undertake work correctly. It also covers developing and maintaining good working relationships within the organisation, especially with colleagues, but also importantly with customers.

### Outcomes

|  |  |
| --- | --- |
| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. comply with health and safety requirements and procedures at all times 2. transport and store materials carefully to avoid unnecessary damage 3. confirm suitable quantities of materials are used during work activities 4. salvage surplus materials for further processing wherever possible 5. use equipment following standard operating procedures and manufacturers’ instructions 6. maintain equipment following standard operating procedures 7. minimise expenditure on non-essential items wherever this does not affect quality 8. confirm work activities undertaken are within one's own competence 9. identify and pass on potential improvements to work activities to the appropriate people 10. identify the most appropriate sources of information 11. record information in the appropriate information systems 12. provide information to other people as soon as possible after they have requested it 13. check information provided to other people is accurate and contains sufficient detail to meet their requirements 14. provide information in a way that is appropriate to the person requesting it 15. identify any problems relating to the exchange of information and deal with them following standard operating procedures 16. exchange information following standard operating procedures 17. treat people in a way that maintains good working relationships, including treating property with care and respect 18. carry out requests from other people promptly without holding up the course of the work 19. refer requests that cannot be met to an appropriate person | 1. relevant health and safety responsibilities and obligations 2. relevant health and safety procedures that need to be followed 3. how different types of material should be transported and stored 4. quantity of materials used for different work activities 5. materials that can be salvaged, and how are they salvaged 6. equipment to use for different work activities and how to operate them 7. how to avoid damaging equipment through incorrect use 8. maintenance requirements of different types of equipment 9. standard operating procedures for different activities 10. how to obtain information on standard operating procedures 11. standard operating procedures for different activities 12. information systems used 13. most appropriate sources for different types of information 14. procedures for exchanging different types of information 15. consequences of exchanging inaccurate or incomplete information 16. types of problems that could occur and how can be resolved |

## GQAPGSF3 Prepare and operate equipment/machinery/tools in the production of glass supporting fabrications

## Overview

This standard covers the skills and knowledge needed to prepare and operate equipment /machinery/tools in the production of glass supporting fabrications. The equipment is used to undertake work activities, and you are expected to be able to prepare it for operation. You have to monitor the equipment during operation and identify any indications of a malfunction or poor performance. In addition, you have to ensure the equipment is clean and clear from obstructions, although you will not undertake routine or emergency maintenance of the kind carried out by maintenance engineers.

### Outcomes

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| --- | --- |
| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. comply with health and safety requirements and procedures at all times 2. identify and confirm specifications for the work being undertaken 3. select equipment that is suitable and confirm it is available and safe for use 4. prepare the equipment following standard operating procedures 5. start up and shut down the equipment safely, systematically following standard operating procedures 6. operate equipment/machinery/tools following standard operating procedures and manufacturers’ instructions 7. check monitoring and control systems are fully functional 8. remove any items liable to damage the equipment/machinery/tools following standard operating procedures 9. clear equipment/machinery/tools of debris, dirt, and other materials that affect its ability to operate following standard operating procedures 10. identify any problems relating to the equipment/machinery/tools and deal with them following standard operating procedures 11. record information on the operation of the equipment in appropriate information systems | 1. relevant health and safety responsibilities and obligations 2. relevant health and safety procedures that need to be followed 3. how to confirm the correct specifications for the work being undertaken 4. level of detail is required in a specification 5. equipment, materials, and work procedures used for different jobs 6. where to obtain information on the safe use of equipment/machinery/tools 7. equipment to use for different work activities 8. how to avoid damaging equipment through incorrect use 9. how different types of equipment/machinery/tools can be prepared for different requirements 10. how to operate different types of equipment/machinery/tools 11. maintenance requirements of different types of equipment/machinery/tools 12. different monitoring methods for different types of equipment/machinery/tools 13. type of items that could damage the equipment/machinery/tools 14. type of problems that can occur with the equipment/machinery/tools, and the standard operating procedures for dealing with them 15. information systems used 16. why it is important to use the information systems |

### GQAPGSF4 Handle materials or components in the production of glass supporting fabrications

### Overview

This standard covers the skills and knowledge needed to handle materials or components and minimise the wastage of resources. You have to identify what type and quantity of materials or components are required, and then locate them. You will have to handle the materials or components safely, position them for use in their work activities and ensure that all resources are used and disposed of with the minimum of waste.

### Outcomes

|  |  |
| --- | --- |
| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. comply with health and safety requirements and procedures at all times 2. confirm the requirements for materials or components 3. identify the location for materials or components 4. check materials or components match their markings 5. identify any problems and deal with them following standard operating procedures 6. record information in the appropriate information systems 7. handle materials or components in a way that prevents damage to them and their surrounding environment 8. position materials or components to meet specifications 9. use handling equipment that is suitable, and minimise wear and tear on the equipment 10. transport and store materials to avoid unnecessary damage 11. confirm suitable quantities of materials are used during work activities 12. salvage surplus materials for further processing wherever possible 13. use equipment following standard operating procedures and manufacturers’ instructions 14. maintain equipment following standard operating procedures 15. minimise expenditure on non-essential items wherever this does not affect quality 16. confirm work activities are undertaken are within one's own competence 17. identify and pass on potential improvements to work activities to the appropriate people | 1. relevant health and safety responsibilities and obligations 2. relevant health and safety procedures that need to be followed 3. different types of material or components used 4. identification markings for the range of materials or components on site 5. normal locations of materials or components, and the potential alternative locations when these are not available 6. how to check that materials or components match their markings 7. types of problems that can occur and the standard operating procedures for dealing with them 8. how different types of material or components should be handled 9. where to position different types of material or components 10. type of damage that can occur as a result of handling materials or components incorrectly 11. which handling equipment used and its capabilities and capacities 12. authority or licences necessary to use handling equipment 13. how different types of material should be transported and stored 14. quantity of materials used for different work activities 15. materials that can be salvaged, and how are they salvaged 16. information systems used 17. why it is important to use the information systems 18. equipment to use for different work activities 19. how to operate different types of equipment 20. how to avoid damaging equipment through incorrect use 21. maintenance requirements of different types of equipment 22. standard operating procedures for different activities 23. how to obtain information on the standard operating procedures |

### GQAPGSF5 Process products and materials by applying coatings or treatments in the production of glass supporting fabrications

### Overview

This standard covers the skills and knowledge needed to process products and materials by applying coatings or treatments in the production of glass supporting fabrications. This involves preparing the products and materials for the application of the coating or treatment, and ensuring the correct type and quality are available. The candidate then uses the appropriate equipment to coat or treat the products and materials in a way that enables the product to meet the specification. The candidate also has to identify any problems with the process and take the appropriate action.

### Outcomes

|  |  |
| --- | --- |
| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. comply with health and safety requirements and procedures at all times 2. identify and confirm specifications for the preparation of the products and materials 3. check products and materials are available for processing 4. select the type, quantity, and quality of products and materials to be used during the preparation to meet specifications 5. prepare products and materials to meet specifications following standard operating procedures 6. store prepared products and materials in an appropriate place 7. confirm methods for coating or treating the products and materials 8. apply coatings or treatments to meet specifications 9. check application of the coatings or treatments to meet specifications 10. confirm products are removed after the coating or treatment process following standard operating procedures 11. finish coating or treatment of products and materials using the appropriate methods and materials 12. prepare products and materials for further activities to meet specifications 13. store products and materials in appropriate locations following standard operating procedures 14. identify any problems and deal with them following standard operating procedures 15. record information on the coating or treatment of products and materials in the appropriate information systems | 1. relevant health and safety responsibilities and obligations 2. relevant health and safety procedures that need to be followed 3. type of processing undertaken 4. preparation equipment used 5. preparation processes applied to different products and materials 6. type, quantity, and quality of products and materials used in different processes 7. appropriate storage areas for products and materials before and after processing 8. type of problems can occur and the standard operating procedures for dealing with them 9. methods for coating or treating different products and materials 10. type, quantity, and quality of materials used in different coating or treatment processes 11. how to check the application of coatings or treatments 12. how to remove coated or treated products and materials 13. how to finish different types of products and materials after coating or treatment 14. activities that could follow the coating or treatment of products and materials 15. recommended schedules for controlling the condition of coated or treated products and materials 16. information systems used 17. why it is important to use the information systems |

### GQAPGSF6 Prepare products for storage and delivery in the production of glass supporting fabrications

### Overview

This standard covers the skills and knowledge needed to prepare products for storage and delivery in glass processing. The products need to be packed in the correct containers and protected from damage. They also have to be marked with the correct instructions, and this could include the use of labels, stencils or tags.

### Outcomes

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| --- | --- |
| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. comply with health and safety requirements and procedures at all times 2. use packing materials and equipment that are suitable to the products and the type of transportation or storage 3. obtain suitable packing materials that are undamaged and meet requirements 4. check products and packing materials are handled in a way that prevents damage to them 5. assemble packing materials and prepare them to meet specifications 6. check products are packed in a way that prevents damage to them and other contents 7. identify any problems r and deal with them according to standard operating procedures 8. use appropriate marking methods for products and packing 9. check products are marked clearly with the correct instructions to meet specifications 10. check products are undamaged by markings following standard operating procedures 11. record information on the marking of products in the appropriate information systems | 1. relevant health and safety responsibilities and obligations 2. relevant health and safety procedures that need to be followed 3. packing materials and equipment used for different requirements 4. where to obtain packing materials 5. how products and packing materials should be handled to prevent damage to them 6. how different types of packing materials are assembled 7. how products are packed in a way that prevents damage to them and other contents 8. authority or licences necessary to use packing equipment 9. types of problems can occur and the standard operating procedures for dealing with them 10. marking methods for different types of product or packaging 11. how to ensure the correct instructions are attached 12. how to check products have not been damaged by the marking method 13. information systems used 14. why it is important to use the information systems |

GQAPGSF7 Fabricate glass framing systems by processing materials

### Overview

### This standard covers the skills and knowledge needed to fabricate glass framing systems by processing materials, which could include cutting, bending, and drilling. This involves preparing the materials for the process, and ensuring the correct type and quality are available. You will then use the appropriate equipment to apply the process in a way that meets the specification. You have to identify any problems with the process and take the appropriate action.

### Outcomes

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| --- | --- |
| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. comply with health and safety requirements and procedures at all times 2. identify and confirm specifications for preparation of the materials 3. check materials are available for processing to meet specifications 4. select the type, quantity, and quality of materials to be used during the processing to meet specifications 5. prepare materials to meet specifications following standard operating procedures 6. identify any problems and deal with them following standard operating procedures 7. store prepared materials in an appropriate place following standard operating procedures 8. identify suitable methods for processing materials to meet specifications 9. position materials for processing to meet specifications 10. process materials to meet specifications 11. monitor the processing of materials to ensure they achieve the specifications 12. use materials effectively to minimise wastage 13. record information on the processing of materials in the appropriate information systems | 1. relevant health and safety responsibilities and obligations 2. relevant health and safety procedures that need to be followed 3. type of processing undertaken 4. preparation equipment used 5. preparation processes applied to different materials 6. type, quantity, and quality of materials be used in different processes 7. appropriate storage areas for materials before and after processing 8. methods for processing different types of material 9. how to position materials correctly 10. how to utilise materials to minimise wastage 11. problems that can occur and standard operating procedures for dealing with them 12. information systems used 13. why it is important to use the information systems |

### GQAPGSF8 Fabricate glass framing systems by joining

### Overview

This standard covers the skills and knowledge needed to fabricate glass framing systems by joining. This involves preparing the materials for the joining process, and ensuring the correct type and quality are available. You will use the appropriate equipment to join the materials in a way that meets the specification. You will also have to identify any problems with the process and take the appropriate action.

### Outcomes

|  |  |
| --- | --- |
| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. comply with health and safety requirements and procedures at all times 2. identify and confirm specifications for the preparation of materials 3. check materials are available for joining 4. select the type, quantity, and quality of materials to be used during the joining to meet specifications 5. prepare materials following standard operating procedures 6. store prepared materials following standard operating procedures 7. identify suitable joining materials to meet specifications 8. position the materials correctly for joining following standard operating procedures 9. join the materials to meet specifications 10. check joins are square and true 11. remove any excess materials without decreasing the effectiveness of the join 12. identify any problems and deal with them following standard operating procedures 13. record information on the joining of materials in the appropriate information systems | 1. relevant health and safety responsibilities and obligations 2. relevant health and safety procedures that need to be followed 3. type of joining undertaken 4. preparation equipment used 5. preparation processes applied to different materials 6. type, quantity, and quality of materials used in different joining processes 7. appropriate storage areas for materials before and after joining 8. problems that can occur and the standard operating procedures for dealing with them 9. methods for joining different types of material 10. methods for joining sections 11. how to position materials 12. how to ensure joins are square and true 13. how to remove excess materials 14. how to utilise materials to minimise wastage 15. information systems used 16. why it is important to use the information systems |

### GQAPGSF9 Fabricate glass framing systems by assembly

### Overview

This standard covers the skills and knowledge needed to fabricate glass framing systems by assembly. This involves preparing the materials for the assembly process, and ensuring the correct type and quality are available. You will then use the appropriate equipment to assemble the materials in a way that meets the specification. You will also identify any problems with the process and take the appropriate action.

### Outcomes

|  |  |
| --- | --- |
| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. comply with health and safety requirements and procedures at all times 2. identify and confirm specifications for the preparation of the materials 3. check materials are available for assembly to meet specifications 4. select type, quantity, and quality of materials to be used to meet specifications 5. prepare the materials to meet specifications 6. store prepared materials following standard operating procedures 7. identify suitable methods for assembling glass framing systems to meet specifications 8. position the materials for assembly to meet specifications 9. assemble materials to meet specifications 10. clean finished glass framing systems and remove all excess materials following standard operating procedures 11. store finished glass framing systems and label them following standard operating procedures 12. identify any problems and deal with them following standard operating procedures 13. record information on the assembly of glass framing systems in the appropriate information systems | 1. relevant health and safety responsibilities and obligations 2. relevant health and safety procedures that need to be followed 3. assembly undertaken 4. preparation equipment used 5. preparation processes applied to different materials 6. type, quantity, and quality of materials used in different assembly processes 7. appropriate storage areas for materials before and after assembly 8. methods for assembling different types of material 9. how to position materials 10. how to clean different types of assembly, and where to dispose of excess materials 11. problems that can occur during assembly and standard operating procedures for dealing with them 12. information systems used 13. why it is important to use information systems |

## GQAPGSF10

## Promote and maintain health and safety within the production of glass supporting fabrications working environment

### Overview

This standard covers the skills and knowledge needed to not only meet the broad requirements of health and safety, but also ensure that other people also meet them. The first element deals with mainly preventative activities. It covers the need to follow health and safety guidelines and ensuring the work area is free from hazards. The second element deals with coping in an emergency. The candidate is expected to ensure that medical assistance is summoned, and that the emergency services are called where necessary. The third element is concerned with promoting health and safety in the workplace to other colleagues and visitors, trying to ensure they also comply with all relevant requirements. It is also important that developments in health and safety regulations are monitored and promoted.

### Outcomes

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| --- | --- |
| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. follow the regulations and guidelines for health and safety protection at all times 2. check the immediate work area is free from health and safety hazards 3. identify any health and safety hazards and report them to an appropriate authority 4. take suitable action to prevent harm to individuals 5. adopt safe working practices 6. use safety equipment and personal protective equipment following manufacturers instructions 7. use equipment and materials following manufacturers’ and other relevant instructions 8. inform visitors to the work area of health and safety procedures 9. prevent unauthorised access to hazardous areas 10. summon medical assistance in the event of any injury or potential injury to others 11. give priority to the prevention of injury to people over damage to property 12. carry out emergency procedures following standard operating procedures 13. alert the appropriate emergency services and provide them with the information they require 14. confirm emergency equipment is applied by trained personnel wherever possible 15. prevent unauthorised access to dangerous areas 16. report accidents and emergencies in the appropriate information systems 17. monitor organisational changes in health and safety regulations and guidelines and implement their requirements as soon as possible 18. monitor colleagues to ensure they comply with health and safety requirements 19. check work areas are free from health and safety hazards 20. identify potential health and safety hazards and take action to prevent harm to individuals 21. confirm safe working practices are adopted by colleagues and visitors 22. check safety equipment and personal protective equipment are used following standard operating procedures 23. check manufacturers’ and other relevant instructions regarding the safe use of equipment and materials are followed 24. check unauthorised personnel are prevented access to hazardous areas | 1. relevant health and safety regulations and guidelines 2. health and safety hazards found in the workplace 3. who should be informed of health and safety hazards 4. safe and unsafe working practices 5. type of safety equipment and personal protective equipment used in different situations 6. type of injuries that could occur 7. how to summon medical assistance 8. qualified first-aiders available 9. standard operating procedures for different types of emergency 10. how to alert the emergency services, and what type of information will need to be provided 11. evacuation procedures for workers and visitors, and where should people gather 12. who is authorised to enter dangerous areas 13. accident reporting procedures 14. how to obtain information on changes to relevant health and safety regulations and guidelines 15. how to monitor colleagues complying with health and safety requirements 16. duties of employers and employees in relation to health and safety 17. how to identify different types of health and safety hazards 18. actions taken to minimise risks when health and safety hazards are identified 19. health surveillance procedures available, and where to obtain information and training on them 20. which work areas contain hazardous activities 21. where to obtain information on the safe use of equipment 22. health and safety procedures for visitors 23. who is authorised to enter hazardous areas 24. equipment used for different types of emergency 25. who is authorised to use emergency equipment 26. information systems used 27. why it is important to use the information systems |

### GQAPGSF11 Improve the work of the organisation in the production of glass supporting fabrications

### Overview

This standard covers the skills and knowledge needed to get beyond the immediate requirements of the job, and to view work as more than just utilising technical skills. You should not only try to improve the work of the organisation but should also encourage others to do so. The first element covers the need to keep costs down by using resources effectively, and this means ensuring all those that undertake the work also try to do this. It is important that equipment is used economically, that components are not damaged, and that materials are used in the correct quantities. Surplus materials are retained wherever possible. The second element is concerned with obtaining and providing information to ensure that all the information required to undertake the work correctly is available. It also covers the need to provide information to colleagues to ensure they are fully informed of the work that is being undertaken. Finally, the third element concerns the need to develop and maintain good working relationships within the organisation, especially with colleagues, but also importantly with customers.

### Outcomes

|  |  |
| --- | --- |
| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. confirm health and safety procedures are complied with at all times 2. check products and materials are transported to avoid unnecessary damage 3. check suitable quantities of materials are used during work activities 4. confirm surplus materials are salvaged for further processing wherever possible 5. check equipment is used efficiently and carefully following standard operating procedures and manufacturers’ instructions 6. check equipment is maintained following standard operating procedures 7. minimise expenditure on non-essential items wherever this does not affect quality 8. assess if people undertaking work activities are competent to do so as far as is reasonably possible 9. identify and pass on potential improvements to work activities to the appropriate people 10. identify the most appropriate sources of information 11. record information in the appropriate information systems 12. provide information to colleagues as soon as possible after they have requested it 13. ensure information provided to colleagues is accurate and contains sufficient detail to meet their requirements 14. provide information in a way that is appropriate to the person requesting it 15. identify any problems relating to the exchange of information and deal with them following standard operating procedures 16. exchange information following standard operating procedures 17. treat people in a way that maintains good working relationships 18. bring to the attention of colleagues information that might have an immediate effect on their work 19. carry out requests from colleagues promptly without holding up the course of the work 20. refer requests that cannot be met to an appropriate person 21. make resources that are required to achieve work activities available to others 22. treat people’s property with care and respect, and comply with security procedures wherever necessary 23. restrict any adverse impact of own work on other people 24. monitor and resolve problems in working relationships and report those that cannot be resolved to an appropriate authority as soon as possible | 1. relevant health and safety responsibilities and obligations 2. relevant health and safety procedures that need to be followed 3. quantity of materials used for different work activities 4. materials that can be salvaged and how are they salvaged 5. equipment to use for different work activities 6. how to operate different types of equipment 7. how to avoid damaging equipment through incorrect use 8. maintenance requirements of different types of equipment 9. standard operating procedures for different activities 10. how to obtain information on the standard operating procedures 11. information systems used 12. appropriate sources for different types of information 13. procedures for exchanging different types of information 14. consequences of exchanging inaccurate or incomplete information 15. problems that could occur 16. how can different types of problem be resolved 17. why it is important to develop good working relationships with colleagues and customers 18. security procedures for dealing with property 19. who should be informed of problems in working relationships 20. grievance and disciplinary procedures available |

### GQAPGSF12 Assess the quality of glass and glass-related materials/components in the production of glass supporting fabrications

### Overview

This standard covers the skills and knowledge needed to make assessments of the quality of glass and glass-related materials/components in the production of glass supporting fabrications, i.e. those materials that are either glass or are associated with their use, e.g. raw materials, frames and ancillaries. You will need to be able to identify the main characteristics of the glass and glass-related materials/components that they work with, and to ensure that the materials/components match the specifications required by the work being undertaken. You need to be able to detect any obvious variations, e.g. defects in the manufacture of the materials that could adversely affect the work. You also need to be able to identify the most likely causes of these variations, and make recommendations to correct them to the appropriate people

### Outcomes

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| --- | --- |
| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. comply with health and safety requirements and procedures at all times 2. check equipment used to assess quality is functioning following standard operating procedures 3. assess glass and glass-related materials/components using appropriate equipment and methods 4. identify the main characteristics and features of the glass and glass-related materials/components 5. check glass and glass-related materials/components meet the information on them 6. report any discrepancies to the appropriate people according to standard operating procedures 7. obtain specifications for the glass and glass-related materials/components 8. examine glass and glass-related materials/components for variations in quality following standard operating procedures 9. check equipment used in the examination process is appropriate 10. identify any variation between the quality of the glass and glass-related materials/components and the specification 11. access all relevant information on the causes of the variation in glass and glass-related materials/components 12. identify the most likely causes of the variation, and prioritise investigations accordingly 13. identify the causes of the variation following standard operating procedures 14. obtain expert assistance when the causes of variations cannot be identified 15. identify suitable solutions for rectifying the causes of variations 16. check quality assurance results are recorded in the appropriate information systems | 1. relevant health and safety responsibilities and obligations 2. relevant health and safety procedures that need to be followed 3. quantity of glass and glass-related materials/components used for different work activities 4. type of glass and glass-related materials/components are required for different jobs 5. how to confirm the specification of glass and glass-related materials/components 6. problems that can occur and standard operating procedures for dealing with them 7. types of variation in quality could occur 8. indications of the variations 9. most appropriate types of information for identifying causes of a variation 10. likelihood of a variation occurring in different glass and glass-related materials/components 11. methods used for verifying the correct cause of a variation has been identified 12. when it is appropriate to bring in additional expertise and the consequences on the organisation and customers 13. types of solution possible for different quality assurance problems 14. equipment to use for different work activities 15. how to operate different types of equipment 16. how different types of equipment can be set up for different requirements 17. information systems used 18. why it is important to use the information systems |

### GQAPGSF13 Diagnose and rectify technical problems in the production of glass supporting fabrications

### Overview

This standard covers the skills and knowledge needed to diagnose and rectify technical problems in the production of glass supporting fabrications, i.e. those problems that require a high degree of problem solving. Often the location of a technical problem is not immediately apparent, and you will have to investigate the location of the problem and identify its nature. Once the location and nature of the fault is identified, it is necessary to identify what is actually causing it: this might be a component, or faulty materials, or even faulty design. You will then have to work through a number of solutions before determining the right one.

### Outcomes

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| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. comply with health and safety requirements and procedures at all times 2. select appropriate actions to identify technical problems following standard operating procedures 3. investigate indications of technical problems and identify possible locations 4. isolate technical problems to determine actual location 5. seek alternative solutions where technical problems have not been located, and suggest them to the appropriate people 6. inform the relevant people of the consequences of technical problems being located in difficult locations 7. record information in the appropriate information systems 8. investigate technical problems and identify possible causes using appropriate diagnostic methods 9. evaluate the likelihood of each possible cause being responsible for technical problems and prioritise work accordingly 10. diagnose causes of technical problems following standard operating procedures 11. refer technical problems to expert assistance when the cause cannot be identified 12. obtain all relevant information on technical problems 13. arrange for rectification of technical problems using appropriate personnel, equipment, materials, and work procedures 14. check rectification meets all specifications and requirements 15. verify technical problems have been rectified and monitor over a suitable period 16. identify any problems and deal with them following standard operating procedures 17. inform relevant people that technical problems have been rectified | 1. relevant health and safety responsibilities and obligations 2. relevant health and safety procedures that need to be followed 3. types of technical problem that could occur 4. actions required to identify different types of technical problem 5. likely locations of different technical problems 6. locations that are difficult or non-accessible 7. when is it advisable to escalate attempts to find a technical problem, and other actions pursued 8. most appropriate diagnostic methods for identifying the causes of technical problems 9. diagnostic methods used for different types of technical problems 10. possible causes of technical problems 11. when is it advisable to escalate attempts to find a technical problem, and other actions pursued 12. problems that can occur with the diagnostic process and rectification work and standard operating procedures for dealing with them 13. work done to meet different requirements 14. equipment, materials and work procedures used for different jobs 15. information systems used 16. why it is important to use the information systems |

### GQAPGSF14 Plan the use of resources to meet work requirements in the production of glass supporting fabrications

### Overview

This standard covers the skills and knowledge needed to plan the use of resources to meet work requirements in the production of glass supporting fabrications. You have to identify exactly what is required, and what resources should be used to achieve it. You then have to make sure that all the resources, including people, are used effectively to deliver the work requirements. It is important to monitor how the resources are used, and how the progress of the work is being maintained.

### Outcomes

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| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. comply with health and safety requirements and procedures at all times 2. collect all relevant details relating to work requirements 3. select the most appropriate option for achieving work requirements 4. determine which resources should be used to undertake the work 5. obtain information on which resources are available for achieving the work 6. inform the relevant people that resources will be required 7. identify any problems deal with them following standard operating procedures 8. identify work tasks that need to be completed to meet specifications 9. select appropriate resources for completing tasks 10. devise schedules of work that are achievable within the constraints of the organisation 11. provide information on work schedules to all relevant people 12. monitor progress against work schedules 13. monitor the use of materials and ensure they meet specifications 14. monitor the use of resources in achieving the work requirements 15. record information on the progress of the work in the appropriate information system | 1. relevant health and safety responsibilities and obligations 2. relevant health and safety procedures that need to be followed 3. work done to meet different requirements 4. equipment, materials, and work procedures used for different jobs 5. how to devise a schedule of work 6. how to monitor the progress of work 7. resources required for different types of work 8. resources available 9. how to monitor the resources being used 10. standard operating procedures for different activities 11. how to obtain information on the standard operating procedures 12. problems that could occur 13. how can different types of problem be resolved |

### GQAPGSF16 Set up equipment for operations in the production of glass supporting fabrications

### Overview

This standard covers the skills and knowledge needed to set up equipment in the production of glass supporting fabrications. The equipment is used to undertake work activities, and you are expected to be able to set it up to meet a range of requirements. This will involve obtaining the specifications for the products or materials that are being worked on and determining the correct settings for the equipment. You then have to monitor the equipment during operation and identify any indications of malfunction or poor performance.

### Outcomes

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| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. comply with health and safety requirements and procedures at all times 2. obtain specifications for the work being undertaken 3. select suitable equipment and confirm it is available and safe for use 4. determine appropriate settings for the equipment to meet specifications 5. check settings are adjusted on t equipment to meet specifications 6. operate equipment following standard operating procedures and manufacturers’ instructions 7. check monitoring and control systems are accurate and fully functional 8. check monitoring and control systems are accessible, clear of obstructions and debris, and clean 9. confirm items liable to damage equipment are removed immediately 10. check equipment is cleared of debris, dirt, and other materials that affects its ability to operate 11. identify any problems deal with them following standard operating procedures 12. record information in the appropriate information systems | 1. relevant health and safety responsibilities and obligations 2. relevant health and safety procedures that need to be followed 3. how to confirm specifications for the work being undertaken 4. level of detail required in a specification 5. equipment to use for different work activities 6. how different types of equipment can be set up for different requirements 7. how to operate different types of equipment 8. maintenance requirements of different types of equipment 9. different monitoring methods for different types of equipment 10. items that could damage equipment 11. problems that can occur with the equipment and standard operating procedures for dealing with them 12. information systems used 13. why it is important to use the information systems |

### GQAPGSF17 Fabricate complex glass framing systems

### Overview

This standard covers the skills and knowledge needed to fabricate complex glass framing systems e.g. non-square frames. The complexity could be because the products have special requirements relating to their production, have features that are difficult to achieve, or require a mixture of materials and processes that are particularly unusual. The fabrication involves preparing the materials for the fabrication, and ensuring the correct type and quality are available. You will then use the appropriate equipment and processes to fabricate the materials in a way that meets the specification. You will also have to identify any problems with the process and take the appropriate action.

### Outcomes

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| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. comply with health and safety requirements and procedures at all times 2. identify and confirm specifications for preparation of materials 3. identify complex requirements of the fabrication to meet specifications 4. check materials are available for fabrication 5. select the type, quantity, and quality of materials to meet specifications 6. prepare materials to meet specifications 7. store prepared materials following standard operating procedures 8. identify suitable methods for fabricating complex glass framing systems to meet specifications 9. position materials for fabrication following standard operating procedures 10. fabricate materials to meet specifications 11. clean finished glass framing systems and remove all excess materials 12. store finished glass framing systems and label them following standard operating procedures 13. identify any problems relating to the fabrication and deal with them according to standard operating procedures 14. record information on the fabrication of complex glass framing systems in the appropriate information systems | 1. relevant health and safety responsibilities and obligations 2. relevant health and safety procedures that need to be followed 3. type of complex requirements could arise 4. special methods and equipment necessary to deal with complex requirements 5. type of fabrication undertaken 6. preparation equipment used 7. preparation processes applied to different materials 8. type, quantity, and quality of materials used in different fabrication processes 9. appropriate storage areas for materials before and after fabrication 10. methods for fabricating different types of complex glass framing system 11. how to position materials correctly 12. how to clean different types of fabrication, and where to dispose of excess materials 13. problems that can occur during fabrication and standard operating procedures for dealing with them 14. information systems used 15. why it is important to use the information systems |

### GQAPGSF18 Control fabrication operations

### Overview

This standard covers the skills and knowledge needed to control fabrication operations. While not necessarily being a supervisor, you will monitor what is happening during fabrication and ensure that any problems are identified with the equipment or with working practices. You, being experienced in the fabrication operations, should be able to provide advice and guidance to other workers on what to do in a variety of routine and non-routine situations. You will be able to demonstrate the correct use of equipment and identify where work practices could be improved.

### Outcomes

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| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. comply with health and safety requirements and procedures at all times 2. monitor the use of materials in the fabrication equipment and identify any variations from specifications 3. monitor operating conditions of fabrication equipment and identify any variations from specifications 4. inspect fabrication equipment regularly and identify any malfunctions and obstructions 5. confirm fabrication equipment is operated effectively and efficiently 6. identify any problems relating to the fabrication operations and deal with them following standard operating procedures 7. record information on fabrication operations in the appropriate information systems 8. monitor actions of colleagues to determine whether they need assistance 9. provide clear instructions on the use of fabrication equipment 10. instruct on the use of fabrication equipment where necessary 11. assist colleagues with information on fabrication operations whenever necessary 12. identify good practice in fabrication operations 13. provide realistic recommendations on potential improvements for fabrication operations | 1. relevant health and safety responsibilities and obligations 2. relevant health and safety procedures that need to be followed 3. fabrication operations that occur 4. different types of material used 5. equipment to use for different work activities 6. typical specifications for t fabrication operations monitored 7. procedures for monitoring fabrication operations 8. problems that can occur with fabrication operations and standard operating procedures for dealing with them 9. fabrication equipment used for different work activities 10. information systems used 11. why it is important to use the information systems |

### GQAPGSF19 Monitor and control operations in a glass or glass related working environment

### Overview

This standard covers the skills and knowledge needed to monitor the Fabrication process; it includes the need to ensure work is completed to meet the job specifications in accordance with safe working practices. There is also the requirement to ensure those working on the tasks have the necessary skills, knowledge and experience required. Knowledge of problem solving and how to resolve and record issues related to the production processes.

### Outcomes

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| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. obtain and confirm relevant documentation to meet specifications 2. check operators have the necessary skills/qualifications/licences 3. monitor operations and discuss observations to meet organisation requirements | 1. how to obtain schedules and specifications for glass or glass related operations 2. how to confirm job specifications 3. what to look for when examining materials 4. how to check if the operators have the necessary skills/qualification/licences to carry out work required 5. problems that can arise and how these might be overcome 6. how to monitor operations 7. how to identify problems with equipment or materials and provide solutions 8. how to inform operators of the safe use of equipment 9. how to identify any incorrect working practices and provide clear advice or guidance 10. how to identify good practice 11. how to identify potential improvements 12. how to make recommendations to adopt good working practice or improve working practice 13. why it is important to record problems, solutions, good working practice, recommendations for improvement 14. how to record problems, solutions, good working practice, and recommendations for improvements |

### GQAPGSF20 Check the quality of products used in the fabrication of glass supporting systems

### Overview

This standard covers the skills and knowledge needed to carry out quality checks on products before, during and after processing. It includes the need to understand the equipment, types and frequency of the quality checks, and record and report the findings. Knowledge of the problems that can occur and how to deal with these is also required.

### Outcomes

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| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. obtain product specifications 2. confirm product specifications 3. select appropriate method and equipment 4. confirm equipment is suitable for use 5. carry out the required type and level of quality check 6. record the results of inspections following standard operating procedures 7. accurately report the results to the appropriate persons | 1. how to obtain product specifications 2. how to confirm product specifications 3. ways to check product quality 4. use and purpose of equipment required in the checks used 5. how to check the equipment is suitable for use 6. the types of variations/defects that can occur 7. actions to take when variations are detected |

### GQAPGSF21 Fabricate glass framing systems by cutting

### Overview

This standard covers the skills and knowledge needed to fabricate of glass framing systems by cutting. This involves preparing the materials for the process, and ensuring the correct type and quality are available. You will use the appropriate equipment to apply the process in a way that meets the specification. You will identify any problems with the process and take the appropriate action.

### Outcomes

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| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. comply with health and safety requirements and procedures during the cutting process 2. identify and confirm specifications for the preparation of the materials 3. check materials are available for cutting 4. select the type, quantity, and quality of materials to be used during the cutting process 5. prepare materials to meet specifications 6. store cut profiles following standard operating procedures 7. identify types of cutting to meet specifications 8. position materials for cutting following standard operating procedures 9. cut materials to meet specifications 10. monitor the cutting of materials to meet specifications 11. use materials effectively to minimise wastage 12. identify any problems and deal with them following standard operating procedures 13. record information on the cutting of materials in the appropriate information systems | 1. relevant health and safety responsibilities and obligations 2. relevant health and safety procedures that need to be followed 3. type of cutting of materials undertaken 4. cutting equipment used 5. cutting processes applied to different materials 6. appropriate storage areas for materials before and after they have been cut 7. methods for cutting different types of material 8. how to position materials correctly 9. how to utilise and optimise materials to minimise wastage 10. problems that can occur and standard operating procedures for dealing with them 11. information systems used 12. why it is important to use the information systems |

### GQAPGSF22 Fabricate glass framing systems by preparing materials

### Overview

This standard covers the fabrication of glass framing systems by processing materials, which could include bending and drilling. This involves preparing the materials for the process, and ensuring the correct type and quality are available. The learner then uses the appropriate equipment to apply the process in a way that meets the specification. The learner also has to identify any problems with the process and take the appropriate action.

### Outcomes

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| **Performance Criteria**  *You must be able to:* | **Knowledge & Understanding**  *You need to know and understand:* |
| 1. comply with health and safety requirements and procedures when preparing materials 2. identify and confirm specifications for the preparation of the materials 3. select the type, quantity, and quality of materials to be used during the processing 4. check materials are available for processing 5. prepare materials following standard operating procedures 6. store prepared materials following standard operating procedures 7. identify suitable methods for preparing materials 8. position materials to meet specifications 9. prepare materials to meet specifications 10. monitor preparation of materials to meet specifications 11. use materials effectively to minimise wastage 12. identify any problems and deal with them following standard operating procedures 13. record information on the preparation of materials in the appropriate information systems | 1. relevant health and safety responsibilities and obligations 2. relevant health and safety procedures that need to be followed 3. type of processing undertaken 4. preparation equipment used 5. preparation processes applied to different materials 6. type, quantity, and quality of materials used in different processes 7. appropriate storage areas for materials before and after preparation 8. how to position materials 9. how to utilise materials to minimise wastage 10. problems that can occur within the preparation process and standard operating procedures for dealing with them 11. information systems used 12. why it is important to use the information systems |