



Australian Government

Department of Education, Employment and Workplace Relations

LMFGG3011B Set up and operate glass silvering equipment

Revision Number: 1

LMFGG3011B Set up and operate glass silvering equipment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit addresses the knowledge and skills required to set up and operate glass silvering equipment.
------------------------	--

Application of the Unit

Application of the unit	
--------------------------------	--

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	Nil	

Employability Skills Information

Employability skills	This unit contains employability skills.
-----------------------------	--

Elements and Performance Criteria Pre-Content

<p>Elements describe the essential outcomes of a unit of competency.</p>	<p>Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.</p>
--	---

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for work	<p>1.1. Work requirements from work instructions to ascertain:</p> <ul style="list-style-type: none"> 1.1.1. material to be used 1.1.2. process required to complete work tasks 1.1.3. number of sheets to be silvered and holding area for completed items <p>1.2. Workplace health and safety requirements relevant to operating glass silvering equipment including personal protection needs, are observed throughout the work</p> <p>1.3. Communication with others involved with the work is established and maintained to ensure efficient workflow coordination, personnel cooperation and safety throughout the application of this competency</p> <p>1.4. Work sequence is planned in a logical order to suit the job</p> <p>1.5. Tools, equipment and materials are selected and checked prior to use to ensure that they are appropriate for the work, of the required quality, serviceable and in a safe condition</p> <p>1.6. Machines are identified and checked for safe and effective operation, including emergency stops, gauges, guards and controls</p> <p>1.7. Procedures are identified for checking:</p> <ul style="list-style-type: none"> 1.7.1. quality of materials and items produced 1.7.2. working condition of equipment 1.7.3. quality requirements for each stage of the silvering process <p>1.8. Communication with others involved with the work is established and maintained to ensure efficient workflow coordination, personnel cooperation and safety throughout the application of this competency</p> <p>1.9. The processes for obtaining materials and moving completed work to the next process are identified</p>
2. Prepare glass for silvering	<p>2.1. If applicable, existing silver is removed by acid washing, cleaning and/or polishing</p> <p>2.2. Glass to be silvered is washed with detergent in accordance with workplace procedures or industry practice</p> <p>2.3. Glass to be silvered is rinsed with demineralised</p>

ELEMENT	PERFORMANCE CRITERIA
	water in accordance with workplace procedures or industry practice
3. Conduct glass silvering operations	<p>3.1. Tinning solution is applied in accordance with workplace procedures or industry practice</p> <p>3.2. Glass is rinsed with demineralised water in accordance with workplace procedures or industry practice</p> <p>3.3. Silver solution is applied to glass in accordance with workplace procedures or industry practice</p> <p>3.4. Glass is washed and blow dried in accordance with workplace procedures or industry practice</p> <p>3.5. Backing paint is applied in accordance with workplace procedures or industry practice</p>
4. Complete work	<p>4.1. Product is inspected for quality of work and items which do not meet quality requirements discarded or returned for reprocessing in accordance with workplace procedures</p> <p>4.2. Completed work is placed in holding area in accordance with workplace procedures</p> <p>4.3. Work area is cleaned and rubbish disposed of as appropriate</p> <p>4.4. Equipment is cleaned and inspected for serviceability and stored in accordance with workplace procedures</p> <p>4.5. Unserviceable equipment is tagged and faults identified in accordance with workplace procedures</p> <p>4.6. Workplace documentation is completed in accordance with workplace requirements</p> <p>4.7. Tools, equipment and unused materials are removed and stored appropriately</p>

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- collect, organise and understand information related to work orders, basic plans, and safety procedures
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with work supervisor, other workers and customers, and the reporting of work outcomes and problems
- plan and organise activities including the preparation and layout of the work area and the obtaining of equipment and materials to avoid any back tracking, workflow interruptions or wastage
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity
- use mathematical ideas and techniques to correctly complete measurements, calculate work requirements, optimise glass sizes for handling and processing and assemble required materials
- use pre-checking and inspection techniques to plan work, avoiding re-working and wastage
- use the workplace technology related to the operation of glass silvering equipment

Required knowledge

- procedures for the planning, preparation, operation and completion of glass silvering operations
- workflow in relation to the operation of glass silvering equipment
- workplace procedures for the reporting of material, product or equipment faults
- relevant Australian Safety Standards
- identify, handle and store hazardous chemicals
- characteristics of materials used and uses of products produced by glass silvering operations
- workplace safety system requirements related to the operation of glass silvering equipment

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects of evidence

- Interpret work order/job instruction and locate and apply relevant information to operate glass silvering equipment
- Plan and prepare for the conduct of glass silvering operations
- Conduct glass silvering operations
- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment
- Follow work instructions, operating procedures and inspection practices to:
 - minimise the risk of injury to self and others
 - prevent damage to goods, equipment and products
 - maintain required production output and product quality
- As a minimum, demonstrate the ability to:
 - prepare silvering formulae
 - perform equipment checks
 - set up and prepare silvering equipment
 - clean and prepare glass for silvering
 - apply tinning, silvering and copper solutions on glass
 - dry and apply packing paint
 - strip, buff, clean, prepare and re-silver mirrors
 - handle and store mirrors
 - clean solution tanks, lines, spray guns and equipment after use
- Work effectively with others
- Modify activities to cater for variations in workplace contexts and environment

Resource implications

Glass silvering equipment, demineralised water, acid, silvering chemicals, backing paint, workplace operating procedures, unprocessed materials, personal protective equipment and an appropriate work area.

Method of assessment

Assessment methods must confirm consistency of

EVIDENCE GUIDE	
	<p>performance over time and in a range of workplace relevant contexts.</p> <p>Assessment should be by direct observation of tasks and questioning on underpinning knowledge.</p> <p>Assessment may be in conjunction with assessment of other relevant units of competency.</p>
Context of assessment	<p>Assessment may occur on the job or in a workplace simulated facility with relevant glass silvering equipment, materials, work instructions and deadlines.</p>

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Unit context

- Work requires individuals to demonstrate discretion, judgement and problem solving skills in the set up and operation of glass silvering machines and equipment
- Work is carried out in accordance with statutory requirements, environment legislation, manual handling procedures and relevant regulations and organisation insurance requirements
- OHS requirements may include legislation, standards, building codes, material safety management systems and local safe operating procedures
- Work is generally performed individually, with general supervision and may be part of a production process

Glass silvering

Glass silvering involves processes and equipment to silver glass for the manufacture of mirrors and other glass products

Tools and equipment are to include:

- semi-automatic and computer-navigated silvering equipment
- buffing and cleaning tables
- spray booths
- copper plating electrodes
- extractor fans
- dual nozzle spray guns
- compressors
- solution containers
- heated drying racks
- water distiller
- silvering formulas
- tinning solution
- backing paint and stripping acid tanks for resilvering

RANGE STATEMENT	
Materials are to include but are not limited to:	<ul style="list-style-type: none"> • annealed • sheet • laminated and toughened glass
Personal protective equipment	<p>Personal protective equipment is to include that prescribed under legislation, regulations and enterprise practices and procedures. It may include:</p> <ul style="list-style-type: none"> • gauntlets • gloves • safety glasses • respiratory masks • hard hats • safety footwear • aprons and overalls
Information and procedures	<ul style="list-style-type: none"> • Workplace procedures relating to the setting up and operation of glass silvering processes and equipment • Equipment manufacturer specifications and operational procedures • Workplace procedures relating to the handling and movement of glass • Work instructions, including job sheets, cutting lists, plans, drawings and designs • Safety standards include personal protective equipment, OHS regulations and enterprise requirements • Australian Standards

Unit Sector(s)

Unit sector	Glass and Glazing
--------------------	-------------------

Competency field

Competency field	
-------------------------	--

Co-requisite units

Co-requisite units		