



Australian Government

Department of Education, Employment and Workplace Relations

LMFGG3011C Set up and operate glass silvering equipment

Release: 1

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Modification History

Updated format, revised Evidence Guide. Outcome equivalent.

Unit Descriptor

This unit of competency covers the skills and knowledge required to set up and operate glass silvering equipment.

Application of the Unit

This unit requires individuals to demonstrate discretion, judgement and problem solving in the set-up and operation of glass silvering machines and equipment. Work is generally performed individually or in a team environment, with general supervision, and may be part of a production process.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

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.

Elements and Performance Criteria

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| 1 | Prepare for work | 1.1 | Work requirements are determined from work instructions |
| | | 1.2 | Occupational health and safety (OHS) requirements relevant to operating glass silvering equipment, including personal protective equipment , are observed throughout the work |
| | | 1.3 | Work sequence is planned in a logical order to suit the job requirements and workplace procedures |
| | | 1.4 | Tools, equipment and materials are selected and checked prior to use to ensure they are appropriate for the work, of the required quality, serviceable and in a safe condition |
| | | 1.5 | Machines are identified and checked for safe and effective operation, including emergency stops, gauges, guards and controls |
| | | 1.6 | Procedures for checking the quality of materials and items produced, working condition of equipment and quality requirements for each stage of the silvering process are identified |
| | | 1.7 | Communication with others involved with the work is established and maintained to ensure efficient workflow coordination, personnel cooperation and safety throughout the glass silvering process |
| | | 1.8 | The processes for obtaining materials and moving completed work to the next process are identified |
| 2 | Prepare glass for silvering | 2.1 | If applicable, existing silver is removed by acid washing, cleaning and/or polishing |
| | | 2.2 | Glass to be silvered is washed with detergent in accordance with workplace procedures or industry practice |
| | | 2.3 | Glass to be silvered is rinsed with demineralised water in accordance with workplace procedures or industry practice |

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| 3 | Conduct glass silvering operations | 3.1 | Tinning solution is applied in accordance with workplace procedures or industry practice |
| | | 3.2 | Glass is rinsed with demineralised water in accordance with workplace procedures or industry practice |
| | | 3.3 | Silver solution is applied to glass in accordance with workplace procedures or industry practice |
| | | 3.4 | Glass is washed and blow dried in accordance with workplace procedures or industry practice |
| | | 3.5 | Backing paint is applied in accordance with workplace procedures or industry practice |
| 4 | Complete work | 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 |
| | | 4.2 | Completed work is placed in holding area in accordance with workplace procedures |
| | | 4.3 | Work area is cleaned and rubbish disposed of, as appropriate |
| | | 4.4 | Equipment is cleaned and inspected for serviceability and stored in accordance with workplace procedures, unserviceable equipment tagged, and faults identified and reported in accordance with workplace procedures |
| | | 4.5 | Tools, equipment and unused materials are removed and stored appropriately |
| | | 4.6 | Workplace documentation is completed in accordance with workplace requirements |

Required Skills and Knowledge

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

Required skills include:

- collecting, organising and understanding information related to work orders, basic plans and safety procedures
- using communication skills to the level required to confirm work requirements and specifications; communicate effectively regarding work requirements with supervisors, other workers and customers; report work outcomes and problems; and relate to people from a range of social, cultural and ethnic backgrounds, and of varying physical and mental abilities
- using literacy skills to the level required to understand information related to work orders, including common industry terminology, plans and safety procedures; prepare reports; and interpret technical information and specifications
- planning and organising activities, including the preparation and layout of the work area, and the obtaining of equipment and materials to avoid any backtracking, workflow interruptions or wastage
- working with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity
- using mathematical ideas and techniques to correctly complete measurements, calculate work requirements, optimise glass sizes for handling and processing, and assemble required materials
- using pre-checking and inspection techniques to plan work, and avoid re-working and wastage
- using workplace technology related to the operation of glass silvering equipment
- modifying activities to cater for variations in workplace contexts and environment

Required knowledge includes:

- correct procedures for the planning, preparation, operation and completion of glass silvering operations
- workflow requirements in relation to the operation of glass silvering equipment
- workplace procedures for the reporting of material, product or equipment faults
- relevant Australian Standards
- correct identification, handling and storage requirements for 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
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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.

Overview of assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the language, literacy and numeracy capacity of the candidate and the work being performed.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently: • 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: • 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.
Context of and specific resources for assessment	The application of competency is to be assessed in the workplace or realistically simulated workplace. Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

	Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context. Assessment is to comply with relevant regulatory or Australian Standard requirements. The following resources should be made available: • glass silvering equipment • demineralised water • acid • silvering chemicals • backing paint • workplace operating procedures • unprocessed materials • personal protective equipment • an appropriate work area.
Method of assessment	Assessment must satisfy the endorsed Assessment Guidelines of the LMF02 Furnishing Industry Training Package. Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge. Assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure correct interpretation and application. Assessment may be applied under project-related conditions (real or simulated) and require evidence of process. Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances. Assessment may be in conjunction with assessment of other units of competency.
Guidance information for assessment	

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.

<i>Work requirements may include:</i>	• material to be used • process required to complete work tasks • number of sheets to be silvered and holding area for completed items
<i>Glass silvering involves:</i>	• processes and equipment to silver glass for the manufacture of mirrors and other glass products
<i>Personal protective equipment includes:</i>	• that prescribed under legislation, regulations and enterprise practices and procedures, and may include: • gauntlets • gloves • safety glasses • respiratory masks • hard hats • safety footwear • aprons and overalls
<i>Workplace procedures include:</i>	• 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, including personal protective equipment, OHS regulations and enterprise requirements • relevant Australian Standards
<i>Tools and equipment are to include:</i>	• 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
Materials are to include, but are not limited to:	• annealed glass • sheet glass • laminated and toughened glass

Unit Sector(s)

Not applicable.

Custom Content Section

Not applicable.