



**Australian Government**

# **MSFGG3012 Set up and operate glass mirroring equipment**

**Release: 1**

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## Modification History

Release 1 - New unit of competency

## Application

This unit of competency covers setting up and operating glass mirroring equipment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

## Pre-requisite Unit

## Competency Field

## Unit Sector

Glass and Glazing

## Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

|   |                  |     |                                                                                                                                                                                |
|---|------------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Prepare for work | 1.1 | Work requirements are determined from work instructions                                                                                                                        |
|   |                  | 1.2 | Work health and safety (WHS) requirements relevant to operating glass mirroring 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 mirroring process are identified                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |                                                                                                                                                                          |     |                                                                                                            |     |                                                                                                                      |     |                                                                                                                                                                                                                      |     |                                                                                       |
|     | 1.7                                                                                                                                                                                                                  | Communication with others involved with the work is established and maintained to ensure efficient work flow coordination, personnel cooperation and safety throughout the glass mirroring process                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |     |                                                                                                                                                                          |     |                                                                                                            |     |                                                                                                                      |     |                                                                                                                                                                                                                      |     |                                                                                       |
|     | 1.8                                                                                                                                                                                                                  | The processes for obtaining materials and moving completed work to the next process are identified                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |     |                                                                                                                                                                          |     |                                                                                                            |     |                                                                                                                      |     |                                                                                                                                                                                                                      |     |                                                                                       |
| 2   | Prepare glass for mirroring                                                                                                                                                                                          | <table><tr><td>2.1</td><td>If applicable, existing mirror is removed by acid washing, cleaning and/or polishing</td></tr><tr><td>2.2</td><td>Glass to be mirrored is washed with detergent in accordance with workplace procedures or industry practice</td></tr><tr><td>2.3</td><td>Glass to be mirrored is rinsed with demineralised water in accordance with workplace procedures or industry practice</td></tr></table>                                                                                                                                                                                                                                                     | 2.1 | If applicable, existing mirror is removed by acid washing, cleaning and/or polishing                                                                                     | 2.2 | Glass to be mirrored is washed with detergent in accordance with workplace procedures or industry practice | 2.3 | Glass to be mirrored is rinsed with demineralised water in accordance with workplace procedures or industry practice |     |                                                                                                                                                                                                                      |     |                                                                                       |
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| 2.2 | Glass to be mirrored is washed with detergent in accordance with workplace procedures or industry practice                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                                                                                                                                                                          |     |                                                                                                            |     |                                                                                                                      |     |                                                                                                                                                                                                                      |     |                                                                                       |
| 2.3 | Glass to be mirrored is rinsed with demineralised water in accordance with workplace procedures or industry practice                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                                                                                                                                                                          |     |                                                                                                            |     |                                                                                                                      |     |                                                                                                                                                                                                                      |     |                                                                                       |
| 3   | Conduct glass mirroring operations                                                                                                                                                                                   | <table><tr><td>3.1</td><td>Tinning solution is applied in accordance with workplace procedures or industry practice</td></tr><tr><td>3.2</td><td>Glass is rinsed with demineralised water in accordance with workplace procedures or industry practice</td></tr><tr><td>3.3</td><td>Mirror solution is applied to glass in accordance with workplace procedures or industry practice</td></tr><tr><td>3.4</td><td>Glass is washed and blow dried in accordance with workplace procedures or industry practice</td></tr><tr><td>3.5</td><td>Backing paint is applied in accordance with workplace procedures or industry practice</td></tr></table>                              | 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 | Mirror 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 |
| 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 | Mirror 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                                                                                                                                                                                                        | <table><tr><td>4.1</td><td>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</td></tr><tr><td>4.2</td><td>Completed work is placed in holding area in accordance with workplace procedures</td></tr><tr><td>4.3</td><td>Work area is cleaned and rubbish disposed of, as appropriate</td></tr><tr><td>4.4</td><td>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</td></tr></table> | 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 |     |                                                                                       |
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| 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

## **Foundation Skills**

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency. Detail on appropriate performance levels for each furnishing unit of competency in reading, writing, oral communication and numeracy utilising the Australian Core Skills Framework (ACSF) are provided in the Furnishing Training Package Implementation Guide.

## Range of Conditions

Specifies different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Range is restricted to essential operating conditions and any other variables essential to the work environment.

- |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Unit context includes:</b>       | <ul style="list-style-type: none"><li>• WHS requirements, including legislation, building codes, material safety management systems, hazardous and dangerous goods codes, and local safe operating procedures or equivalent</li><li>• work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual handling procedures and organisation insurance requirements</li><li>• work requires individuals to demonstrate some discretion, judgement and problem solving</li></ul> |
| <b>Work requirements include:</b>   | <ul style="list-style-type: none"><li>• material to be used</li><li>• process required to complete work tasks</li><li>• number of sheets to be mirrored and holding area for completed items</li></ul>                                                                                                                                                                                                                                                                                                                                       |
| <b>Glass mirroring involves:</b>    | <ul style="list-style-type: none"><li>• processes and equipment to mirror glass for the manufacture of mirrors and other glass products</li></ul>                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Tools and equipment include:</b> | <ul style="list-style-type: none"><li>• semi-automatic and computer-navigated mirroring equipment</li><li>• buffing and cleaning tables</li><li>• spray booths</li><li>• copper plating electrodes</li><li>• extractor fans</li><li>• dual nozzle spray guns</li><li>• compressors</li><li>• solution containers</li><li>• heated drying racks</li><li>• water distiller</li><li>• mirroring formulas</li><li>• tinning solution</li><li>• backing paint</li><li>• stripping acid tanks for re-mirroring</li></ul>                           |
| <b>Materials include:</b>           | <ul style="list-style-type: none"><li>• annealed glass</li><li>• sheet glass</li><li>• laminated glass</li><li>• toughened glass</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Personal protective</b>          | <ul style="list-style-type: none"><li>• that prescribed under legislation, regulation and enterprise</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                               |

**equipment includes:****policies and practices:**

- gauntlets
- gloves
- safety glasses
- hard hats
- safety footwear
- aprons and overalls
- respiratory masks

**Information and procedures include:**

- workplace procedures relating to the use of tools and equipment and personal protective equipment
- work instructions, including job sheets, cutting lists, plans, drawings and designs
- workplace procedures relating to reporting and communication
- manufacturer specifications and operational procedures
- relevant Australian Standards

## Unit Mapping Information

Supersedes and is equivalent to LMFGG3011C Set up and operate glass silvering equipment.

## Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>