



Australian Government

Department of Education, Employment and Workplace Relations

LMFGG3010B Set up and operate glass toughening equipment

Revision Number: 1

LMFGG3010B Set up and operate glass toughening equipment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit addresses the knowledge and skills required to set up and operate glass toughening equipment. It includes operator maintenance.
------------------------	---

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. the required machine settings and adjustments 1.1.4. number of sheets to be toughened and holding area for completed items <p>1.2. Workplace health and safety requirements relevant to operating glass toughening equipment, including personal protection needs, are observed throughout the work</p> <p>1.3. Work sequence is planned in a logical order to suit the job</p> <p>1.4. 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>1.5. Machines are identified and checked for safe and effective operation, including emergency stops, gauges, guards and controls</p> <p>1.6. Procedures are identified for checking:</p> <ul style="list-style-type: none"> 1.6.1. quality of materials and items produced 1.6.2. working condition of equipment 1.6.3. quality requirements for each stage of the toughening process <p>1.7. 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>
2. Set up equipment	<p>2.1. Machine settings and adjustments are made in accordance with job requirements and machine and tool manufacturer instructions</p> <p>2.2. Trial runs are conducted to check machine operation, accuracy and quality of finished work</p> <p>2.3. Necessary adjustments are made to machine settings</p>
3. Conduct glass toughening operations	<p>3.1. Glass to be toughened is prepared for process in accordance with workplace procedures or industry practice</p> <p>3.2. Glass to be toughened is positioned on furnace load</p>

ELEMENT	PERFORMANCE CRITERIA
	<p>table and stamped with product identification in accordance with workplace procedures or industry practice</p> <p>3.3. Glass is loaded into furnace in accordance with manufacturers' instructions and workplace procedures</p> <p>3.4. Correct furnace pre-start, start-up and set-up procedures are completed in accordance with manufacturer instructions and workplace procedures</p> <p>3.5. Furnace operation is monitored and adjustments made as required in accordance with manufacturer instructions or workplace procedures</p> <p>3.6. Problems occurring during work operations are identified and reported to appropriate persons</p> <p>3.7. Correct furnace shut-down and end of shift procedures are followed in accordance with manufacturer instructions and workplace procedures</p> <p>3.8. Glass is unloaded from furnace in accordance with manufacturers' instructions and workplace procedures</p>
4. Complete work and maintain equipment	<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 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. Equipment is maintained in accordance with workplace procedures</p> <p>4.7. Workplace documentation is completed in accordance with workplace requirements</p> <p>4.8. Tools, equipment and unused materials are removed and stored appropriate</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 toughening equipment

Required knowledge

- procedures for the set up, operation and operator maintenance of glass toughening equipment
- workflow relating to the operation of glass toughening equipment
- workplace procedures for the reporting of material, product or equipment faults
- characteristics of materials used and uses of products produced in the glass toughening process
- identification of equipment, processes and procedures
- workplace safety system requirements related to the operation of glass toughening 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 toughening equipment
- Plan the conduct of glass toughening operations
- Set up, operate, monitor and perform operator maintenance of glass toughening equipment
- 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:
 - identify the features of the glass toughening process including the principles, purpose and properties of toughened glass
 - identify the procedures required in the glass toughening process
 - perform pre-inspection and preparation procedures on glass for toughening
 - safely load and operate a glass toughening furnace
 - perform testing, classification and marking of toughened glass in accordance with AS/NZS 2208 Safety glazing materials
- Work effectively with others
- Modify activities to cater for variations in workplace contexts and environment

Resource implications

Glass toughening equipment, workplace operating procedures, unprocessed materials, personal protective equipment and an appropriate work area.

Method of assessment

Assessment methods must confirm consistency of performance over time and in a range of workplace

EVIDENCE GUIDE	
	<p>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 toughening 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.

<p>Unit context</p>	<ul style="list-style-type: none"> • This unit covers work involving the set up, operation and monitoring of equipment used to toughen glass • Work requires individuals to demonstrate discretion, judgement and problem solving skills in the set up and operation of glass toughening machines and equipment • Work is carried out in accordance with statutory requirements, environment legislation, manual handling procedures and relevant regulations and organisation insurance requirements • OH&S 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
<p>Glass toughening equipment</p>	<p>Glass toughening equipment includes that equipment and machines involved in the process of toughening glass. This involves the controlled heating and cooling of glass.</p>
<p>Tools and equipment are to include:</p>	<ul style="list-style-type: none"> • glass washing machines and toughening furnaces
<p>Furnace controls may include but are not limited to:</p>	<ul style="list-style-type: none"> • operating controls • lift • pump • furnace lever • furnace rollers • quench potentiometer • fans • dampers

RANGE STATEMENT	
	<ul style="list-style-type: none"> • actuators • inlet veins and gearboxes
Materials are to include but are not limited to:	<ul style="list-style-type: none"> • clear • tinted and patterned annealed 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 • 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 toughening equipment • Machine 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 • AS/NZS 2208 Safety glazing materials

Unit Sector(s)

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

Competency field

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

Co-requisite units

Co-requisite units		