



Australian Government

Department of Education, Employment and Workplace Relations

LMFGG3012C Set up and operate insulated glass unit manufacturing equipment

Release: 1

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Modification History

Updated format, adding glass rating system references, revised Evidence Guide. Outcome equivalent.

Unit Descriptor

This unit of competency covers the skills and knowledge required to set up and operate insulated glass unit (IGU) manufacturing equipment. It includes the conduct of associated IGU quality testing.

Application of the Unit

This unit covers work involving the set-up, operation and monitoring of IGU manufacturing equipment, including quality testing of IGU and requires individuals to demonstrate discretion, judgement and problem solving. 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 insulating glass 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 | IGU machines, tools and equipment are identified and checked for safe and effective operation, including emergency stops, gauges, guards and controls |
| | | 1.6 | Procedures for checking quality of materials and items produced, rating system compliance, working condition of equipment, and quality requirements for each stage of the IGU manufacturing 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 insulated glass manufacturing process |
| 2 | Set up equipment | 2.1 | Machine settings and adjustments are made in accordance with job requirements and machine and tool manufacturer instructions |
| | | 2.2 | IGU spacers are cut and sorted into order of run in accordance with workplace procedures |
| | | 2.3 | Desiccant to be used in process is tested in accordance with industry standards and workplace practices |
| | | 2.4 | Trial runs are conducted to check machine operation, accuracy and quality of finished work, and any necessary adjustments made to machine settings |

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| 3 | Conduct IGU manufacturing operations | 3.1 | Glass sheets are loaded into IGU machine using the appropriate mechanical handling equipment |
| | | 3.2 | IGU spacers are assembled in accordance with specification/order and workplace procedures |
| | | 3.3 | IGU machine is operated to wash and dry glass and to press the unit |
| | | 3.4 | Unit is unloaded from IGU machine and relocated for sealing using appropriate mechanical handling equipment in accordance with workplace practices |
| | | 3.5 | Primary and secondary seal equipment is operated in accordance with workplace procedures |
| | | 3.6 | Testing for water vapour (dewpoint) and integrity of sealing (moisture) is conducted in accordance with workplace procedures |
| | | 3.7 | Serviceable units are labelled and stored in accordance with industry standards and workplace procedures, with items not meeting quality requirements being discarded or returned for reprocessing in accordance with workplace procedures |
| 4 | Complete work and maintain equipment | 4.1 | Work area is cleaned and rubbish disposed of, as appropriate |
| | | 4.2 | IGU machine is cleaned and inspected for serviceability in accordance with workplace procedures |
| | | 4.3 | Unserviceable equipment is tagged and faults identified in accordance with workplace procedures |
| | | 4.4 | Equipment and tooling is maintained in accordance with workplace procedures |
| | | 4.5 | Tools, equipment and unused materials are removed and stored appropriately |
| | | 4.6 | 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 IGU manufacturing equipment
- modifying activities to cater for variations in workplace contexts and environment

Required knowledge includes:

- correct procedures for the set-up, operation and operator maintenance of IGU manufacturing equipment
- glass and window rating systems for insulation applications
- workflow requirements relating to the operation of IGU manufacturing equipment
- characteristics of materials used and uses of products produced in the IGU manufacturing process
- relevant workplace procedures for the reporting of material, product or equipment faults
- workplace safety system requirements related to the operation of IGU manufacturing equipment

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.

<p>Overview of assessment</p>	<p>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.</p>
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>Assessors must be satisfied that the candidate can competently and consistently:</p> <ul style="list-style-type: none"> • interpret work order/job instruction and locate and apply relevant information, including relevant glass and window rating systems to the operation of IGU manufacturing equipment • plan the conduct of IGU manufacturing operations • set up, operate and monitor IGU manufacturing equipment and the quality testing of IGU • apply safe handling requirements for equipment, products and materials, including use of personal protective equipment • follow work instructions, operating procedures and inspection practices to: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • prepare, set up, manufacture and conduct the appropriate quality testing of five (5) differing IGU patterns to the capacity of the IGU machine • work effectively with others.
<p>Context of and specific resources for assessment</p>	<p>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.</p> <p>Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context.</p> <p>Assessment is to comply with relevant regulatory or Australian Standard requirements.</p> <p>The following resources should be made available:</p>

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| | <ul style="list-style-type: none">• insulated glass unit manufacturing equipment• workplace operating procedures• unprocessed materials• personal protective equipment• an appropriate work area. |
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Method of assessment	<p>Assessment must satisfy the endorsed Assessment Guidelines of the LMF02 Furnishing Industry Training Package.</p> <p>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.</p> <p>Assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure correct interpretation and application.</p> <p>Assessment may be applied under project-related conditions (real or simulated) and require evidence of process.</p> <p>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.</p> <p>Assessment may be in conjunction with assessment of other units of competency.</p>
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>	<ul style="list-style-type: none"> • material to be used • process required to complete work tasks • the required size of the units • number of IGUs required and holding area for completed items
<i>IGUs are:</i>	<ul style="list-style-type: none"> • two sheets of glass that are separated by a spacer, sealed to form an airtight unit
<i>Personal protective equipment includes:</i>	<ul style="list-style-type: none"> • that prescribed under legislation, regulations and enterprise practices and procedures, and may include: <ul style="list-style-type: none"> • gauntlets • gloves

	<ul style="list-style-type: none"> • safety glasses • hard hats • safety footwear • aprons • hearing protection • overalls
Workplace procedures include:	<ul style="list-style-type: none"> • workplace procedures relating to the setting up and operation of IGU manufacturing machinery • 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, including personal protective equipment, OHS regulations and enterprise requirements • Australian Standards: <ul style="list-style-type: none"> • AS 1288:2006 Glass in buildings - Selection and installation. • AS/NZS 2208:1996 Safety glazing materials in buildings • AS/NZS 4666:2000 Insulating glass units • AS/NZS 4667:2000 Quality requirements for cut-to-size and processed glass
Tools and equipment are to include:	<ul style="list-style-type: none"> • cutting equipment (e.g. saws) • spacer preparation equipment (appropriate size) • sieve machine and desiccant equipment • primary seal equipment • secondary seal equipment • basic hand tools (e.g. screwdrivers and scrapers) • mechanical handling equipment
Materials are to include, but are not limited to:	<ul style="list-style-type: none"> • customer requirements for glass (annealed, toughened or laminated) • corner keys for spacers • appropriate primary (polyisobutylene) and secondary sealant (polysulphide) and separation paper
Desiccant is:	<ul style="list-style-type: none"> • a hygroscopic substance that induces or sustains a state of dryness (desiccation)

Unit Sector(s)

Glass and glazing

Custom Content Section

Not applicable.