



Australian Government

MSFGG3013 Set up and operate insulated glass unit (IGU) manufacturing equipment

Release: 2

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Modification History

Release 2 - Update of Australian Standards codes. Statement regarding currency of Australian Standards included in Range of Conditions and Performance Evidence.

Release 1 - New unit of competency

Application

This unit of competency covers setting up and operating IGU manufacturing equipment to process two sheets of glass that are separated by a spacer, and sealed to form an airtight unit and conducting associated quality testing.

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.

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|---|------------------|-----|--|
| 1 | Prepare for work | 1.1 | Work requirements are determined from work instructions |
| | | 1.2 | Work health and safety (WHS) 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 work flow 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 The desiccant hygroscopic substance that induces or sustains a state of dryness (desiccation) 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
- 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 are 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

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.

Unit context includes:

- WHS requirements, including legislation, building codes, material safety management systems, hazardous and dangerous goods codes, and local safe operating procedures or equivalent
- work is carried out in accordance with legislative obligations, environmental legislation, relevant health

	regulations, manual handling procedures and organisation insurance requirements
Work requirements include:	• work requires individuals to demonstrate some discretion, judgement and problem solving • 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
Tools and equipment include:	• 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 include:	• customer requirements for glass (annealed, toughened or laminated) • corner keys for spacers • appropriate primary (polyisobutylene) and secondary sealant (polysulphide) • separation paper
Personal protective equipment includes:	• that prescribed under legislation, regulation and enterprise policies and practices: • gauntlets • gloves • safety glasses • hearing protection • hard hats • safety footwear • aprons and overalls
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 • Australian Standards: • AS 1288:2006 Glass in buildings - Selection and installation. • AS/NZS 2208:1996 Safety glazing materials in

buildings

- AS/NZS 4666:2012 Insulating glass units
- AS/NZS 4667:2000 Quality requirements for cut-to-size and processed glass

Note, wherever Australia Standards are listed they apply at the time of publication, but the most current version (including amendments) or replacement versions are to be used.

Unit Mapping Information

Supersedes and is equivalent to LMFGG3012C Set up and operate insulated glass unit manufacturing equipment.

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for MSFGG3013 Set up and operate insulated glass unit (IGU) manufacturing equipment

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Performance Evidence

- Interpret work order and locate and apply relevant information
- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment
- Identify materials used in the work process
- Follow work instructions, operating procedures and inspection processes to:
 - minimise the risk of injury to self or others
 - prevent damage to goods, equipment and products
 - maintain required production output and product quality
- Prepare, set up, manufacture and conduct the appropriate quality testing of five (5) differing IGU patterns to the capacity of the IGU machine
- Use mathematical ideas and techniques to correctly complete measurements, calculate area and estimate material requirements
- Communicate ideas and information to enable confirmation of work requirements and specifications and the reporting of work outcomes and problems, interpret basic plans and follow safety procedures
- Avoid backtracking, work flow interruptions or wastage
- Work with others and in a team by recognising dependencies and using cooperative approaches to optimise work flow and productivity

Knowledge Evidence

- Correct procedures for the set-up, operation and operator maintenance of IGU manufacturing equipment
- Glass and window rating systems for insulation applications
- Work flow 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
- Relevant Australian Standards

Assessment Conditions

- Assessors must:
 - hold training and assessment competencies as determined by the National Skills Standards Council (NSSC) or its successors
 - have vocational competency in the furnishing industry at least to the level being assessed with broad industry knowledge and experience, usually combined with a relevant industry qualification
 - be familiar with the current skills and knowledge used and have relevant, current experience in the furnishing industry.
- Assessment methods must confirm consistency of performance over time rather than a single assessment event and in a range of workplace relevant contexts.
- Assessment must be by observation of relevant tasks with questioning on underpinning knowledge and, where applicable, multimedia evidence, supervisor's reports, projects and work samples.
- Assessment is to be conducted on single units of competency or in conjunction with other related units of competency. Foundation skills are integral to competent performance in the unit and should not be assessed separately.
- Assessment must occur on the job or in a workplace simulated facility with relevant process, equipment, materials, work instructions and deadlines.
- Access is required to IGU manufacturing equipment, workplace operating procedures, unprocessed materials, personal protective equipment and an appropriate work area.

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