



Australian Government

PMBPROD293 Operate vacuum bagging equipment

Release: 1

PMBPROD293 Operate vacuum bagging equipment

Modification History

Release 1. Supersedes and is equivalent to PMBPROD293B Operate vacuum bagging equipment

Application

This unit of competency covers the skills and knowledge required to operate vacuum bagging equipment to make composite parts.

This unit of competency applies to operators who are required to take product off mould table; prepare materials and moulds; check vacuum bags, closures and fittings; operate the equipment; and recognise routine and non-routine problems and take appropriate action.

This unit of competency applies to an individual working alone or as part of a team or group and working in liaison with other shift team members, team leader and supervisor, as appropriate.

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

Pre-requisite Unit

Nil

Competency Field

Production

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.

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

1	Check work requirements	1.1	Identify work requirements from production plan or request
		1.2	Check product, materials and equipment meet

- requirements for job
- 1.3 Recognise requirements which may not be in accordance with usual practice
- 1.4 Ask questions of appropriate person to confirm non-standard job specifications
- 1.5 Ensure housekeeping is to requirements
- 1.6 Identify hazards associated with job and take appropriate action
- 1.7 Perform other pre-operational checks in accordance with procedures
- 2 **Check process set-up**
 - 2.1 Check safety equipment is in position and working
 - 2.2 Check moulds, vacuum bag, closures and fittings to procedures
 - 2.3 Check moulds for cracks, chips, marks and cleanliness
 - 2.4 Check materials, including fibre preforms, resins, additives and release agents are correct
 - 2.5 Complete pre-start checks
- 3 **Operate equipment to procedures**
 - 3.1 Start equipment safely and correctly when required
 - 3.2 Check process is operating within required limits
 - 3.3 Collect products and store as required
 - 3.4 Check product/process is in specification/to required quality standard
 - 3.5 Maintain supply of materials as required
 - 3.6 Complete logs and records as required
 - 3.7 Collect and segregate scrap, waste and other materials as required
 - 3.8 Keep equipment and work area clean

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|---|--|-----|---|
| | | 3.9 | Shut down as required |
| 4 | Respond to routine problems in accordance with procedures | 4.1 | Recognise known faults that occur during the operation |
| | | 4.2 | Identify and take action on causes of routine faults |
| | | 4.3 | Log problems as required |
| | | 4.4 | Identify non-routine process and quality problems and take appropriate action |

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for 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.

Regulatory framework The latest version of all legislation, regulations, industry codes of practice and Australian/international standards, or the version specified by the local regulatory authority, must be used.

Applicable legislation, regulations, standards and codes of practice include:

- health, safety and environmental (HSE) legislation, regulations and codes of practice relevant to the workplace, equipment and production processes and hazardous materials
- Australian/international standards relevant to the materials being used and products being made
- any relevant licence and certification requirements.

All operations to which this unit applies are subject to stringent HSE requirements, which may be imposed through state/territory or federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and such requirements the legislative requirements take precedence.

Procedures All operations must be performed in accordance with relevant procedures.

Procedures are written, verbal, visual, computer-based or in some other form, and include one or any combination of:

- emergency procedures
- work instructions
- standard operating procedures (SOPs)
- safe work method statements (SWMS)
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant.

Tools and equipment Tools and equipment include:

- moulds
- vacuum bags

- vacuum pumps and fittings eg hoses and couplings
- programmable logic controllers (PLC) if fitted
- hand tools used in the this process.

Additional tools and equipment will be selected as required from:

- hoists/lifting equipment not requiring any special permits or licences
- manual handling aids, such as hand carts and trolleys
- relevant personal protective equipment (PPE).

Hazards

Hazards must be identified and controlled. Identifying hazards requires consideration of:

- hazardous products and materials
- sharp edges, swarf and scrap
- protrusions or obstructions
- slippery surfaces, spills or leaks
- rotational equipment or vibration
- smoke, dust, vapours or other atmospheric hazards
- high temperatures
- electricity
- gas
- gases and liquids under pressure
- structural hazards
- equipment failures
- machinery, equipment and product mass
- other hazards that might arise.

Routine problems

Routine problems must be resolved by applying known solutions.

Routine problems are predictable and include one or more of:

- equipment malfunction
- vacuum leaks
- resin, wet out non-conformance of the laminate
- variations in process conditions especially temperature
- variations affecting cure rate
- variations in materials
- contamination of materials
- equipment, tool or mould damage
- routine product faults
- mould/tooling problems

- variations in materials and/or contamination of materials.

Known solutions are drawn from one or more of:

- procedures
- training
- remembered experience.

Non-routine problems must be reported according to according to relevant procedures.

Unit Mapping Information

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Links

MSA Training Package Implementation Guides - <http://mskills.org.au/training-packages/info/>