Australian Government

PMBPROD291 Operate resin infusion moulding equipment

Release: 1

PMBPROD291 Operate resin infusion moulding equipment

Modification History

Release 1. Supersedes and is equivalent to PMBPROD291B Operate resin infusion moulding equipment

Application

This unit of competency covers the skills and knowledge required to operate resin infusion moulding 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, infusion lines, 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 procedures
		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 the job and take appropriate action
		1.7	Perform other pre-operational checks in accordance with procedures
2	**Conduct pre-operational checks as required**	2.1	Check safety equipment is in position and working
		2.2	Check moulds, 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	Undertake other pre-operational checks in accordance with procedures
3	**Operate resin infusion equipment, to procedure**	3.1	Check process is operating within required limits
		3.2	Check product is in specification and to required quality standard
		3.3	Ensure product is consistently ready for next operation
		3.4	Maintain supply of materials as required
		3.5	Complete logs and records as required
		3.6	Collect and segregate scrap, waste and other materials as required
		3.7	Keep equipment and work area clean
		3.8	Pause infusion cycle and perform emergency stop as required
4	**Resolve routine**	4.1	Recognise known faults that occur during the operation

problems, to procedure	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
- infusion lines
- vacuum pumps and fittings eg hoses and couplings
- programmable logic controllers (PLC) if fitted
- hand tools used in the this process, e.g. dispensing equipment.

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
- 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
- vacuum bag bridging
- vacuum switch-off timing
- stoppage of resin flow
- variations in process conditions especially temperature
- variations affecting cure rate
- variations in materials
- contamination of materials
- equipment, tool or mould damage
- dry spots
- resin pooling
- under-saturation of resin
- poor surface finish
- routine product faults.

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

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=932aacef-7947-4c80-acc6-593719fe4090