



Australian Government

PMBPROD247 Hand lay up composites

Release: 1

PMBPROD247 Hand lay up composites

Modification History

Release 1. Supersedes and is equivalent to PMBPROD247C Hand lay up composites

Application

This unit of competency covers the skills and knowledge required to hand lay up composite materials to form a simple product.

This unit of competency applies to operators who are required to select and prepare materials, set up moulds, lay up the composites 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, material, and equipment meet requirements for the job
		1.3	Recognise requirements which may not be in accordance with usual practice

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| | | 1.4 | Ask questions of appropriate person to confirm unusual practice |
| | | 1.5 | Identify hazards associated with the job and take appropriate action |
| | | 1.6 | Perform other pre-operational checks in accordance with procedures |
| 2 | Set up mould and materials as required | 2.1 | Set up mould ready for production |
| | | 2.2 | Ensure materials are available in the form and quantities required |
| | | 2.3 | Ensure safety equipment is available and fit for use |
| 3 | Hand lay up composites | 3.1 | Apply materials to the mould to specification |
| | | 3.2 | Monitor product/process quality |
| | | 3.3 | Make adjustments or seek assistance to remedy faults and non-conformity as required |
| | | 3.4 | Adjust work to minimise scrap and trim |
| | | 3.10 | |
| 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)
- formulae/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant.

Tools and equipment

Tools and equipment include:

- open moulds for composite products
- hand mixing equipment and stirrers
- knives and cutters to trim fibres
- hand application tools, such as rollers and brushes.

Additional tools and equipment will be selected as required from:

- hand tools
- 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:

- glass and other fibre hazards (inhalation and skin penetration)
- hazardous products and materials
- cutting equipment
- sharp edges, swarf, 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:

- cracks, dents or imperfections of the mould
- incorrect resin ratios
- contamination of materials
- shifting of fibres before resin laid
- stacking of fibre and resin sequence problems

- product problems, such as:
 - voids
 - poor surface finish
 - colour contamination
 - release from mould damage.

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>