



**Australian Government**

# **PMBTECH404 Mould chemical resistant and/or fire retardant fibre-composites**

**Release: 1**

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## **Modification History**

Release 1. Supersedes and is equivalent to PMBTECH404B Mould chemical resistant and/or fire retardant fibre-composites

## **Application**

This unit of competency covers the skills and knowledge required to laminate or lay-up special-purpose chemical resistant/fire retardant composite products. It applies to the making of a resistant/retardant laminate in a factory environment on a mould or the laying up of a composite surface on a substrate, such as a tank surface.

This competency applies to advanced operators, technicians or those in similar roles who are required to confirm the product specifications, decide on suitable materials and processes to meet specifications, and solve process and materials and problems.

This unit of competency applies to a person applying specialised theoretical and technical knowledge and well developed skills in situations that require autonomy, discretion and judgement. The person may work alone or as a member of a team or group and will work 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**

Technical

## **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	<b>Confirm product specifications</b>	1.1	Confirm the conditions of use of the desired composite product
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- 1.2 Confirm the required specification of the desired composite product
    - 1.3 Determine any other special requirements of the desired composite product
    - 1.4 Obtain client sign-off of specification/requirements
- 2 **Select appropriate materials/process to produce the desired composite product**
  - 2.1 Identify the laminate properties suitable for the job
  - 2.2 Select the appropriate resin, matrix and other materials
  - 2.3 Select the process to be used to make product
  - 2.4 Implement measures to control identified hazards in line with procedures and duty of care
  - 2.5 Make trial samples where required and test or arrange testing of samples as required
  - 2.6 Check suitability of combination of materials and process to meet all end use requirement
  - 2.7 Complete pre-start checks
- 3 **Lay up or mould the laminate**
  - 3.1 Prepare and apply mould release to the mould surface if required
  - 3.2 Clean and prepare structure surface for adhesion if required
  - 3.3 Apply laminate materials to the mould or to the structure as required
  - 3.4 Inspect/test the laminate surface as required
  - 3.5 Make adjustments to remedy faults and nonconformity as required
  - 3.6 Adjust process to minimise scrap and waste
  - 3.7 Clean, adjust and lubricate equipment as required
- 4 **Anticipate and**
  - 4.1 Recognise a problem or a potential problem

- solve problems**
- 4.2 Determine problems needing priority action
  - 4.3 Determine possible fault causes
  - 4.4 Solve problems within area of responsibility
  - 4.5 Refer problems outside area of responsibility to designated person, with possible causes
  - 4.6 Follow through items initiated until final resolution has occurred

## 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, manual handling, hazardous materials and product specifications
- 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:

- test procedures
- technical specifications
- technical drawings
- 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
- hand mixing tools, such as stirrers
- knives and cutters to trim fibres
- hand application tools, such as rollers, trowels and brushes
- relevant personal protective equipment (PPE).

**Hazards**

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

- working at heights
- working in confined spaces
- weight, shape, volume of materials to be handled
- hazardous products and materials
- rotational equipment or vibration
- sharp edges, protrusions or obstructions
- slippery surfaces, spills or leaks
- smoke, dust 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.

## 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>