



**Australian Government**

# **PMBTECH405E Repair damaged fibre-composites structures**

**Release: 1**

# PMBTECH405E Repair damaged fibre-composites structures

## Modification History

Release 1. Unit code changed. Application changed. Elements and Performance Criteria changed. Range of Conditions removed. Assessment Requirements changed. Supersedes and is equivalent to PMBTECH405 Repair damaged fibre-composites structures.

## Application

This unit describes the skills and knowledge required to repair composite products in post-production that have cosmetic or structural damage.

This unit applies to an experienced technician working alone or as part of a team.

The unit principally refers to the technician understanding that the scope of the damaged structure dictates the application of the composites materials technology for the repair method.

No licensing or certification requirements exist at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

## Pre-requisite Unit

Nil.

## Competency Field

Technical – Composites

## Elements and Performance Criteria

| Elements                                  | Performance Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Elements describe the essential outcomes. | Performance criteria describe the performance needed to demonstrate achievement of the element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. Assess the product and damage          | <p>1.1 Determine scope of repair required by assessing product and damage against original manufacturer or other specifications</p> <p>1.2 Select suitable repair technique based on manufacturer and job specifications that will meet repair quality standards</p> <p>1.3 Access and interpret testing reports and other available information detailing areas to be repaired and extent of damage</p> <p>1.4 Assess accessibility of damaged section or sections to inform repair process</p> <p>1.5 Assess product to identify areas requiring cosmetic and structural</p> |

| <b>Elements</b>                           | <b>Performance Criteria</b>                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Elements describe the essential outcomes. | Performance criteria describe the performance needed to demonstrate achievement of the element.                                                                                                                                                                                                                                                                                                 |
|                                           | repair                                                                                                                                                                                                                                                                                                                                                                                          |
| 2. Make repairs                           | 2.1 Prepare product as required prior to commencing repair work<br>2.2 Make partial mould or prepare insert moulding to meet repair requirements<br>2.3 Use tapered sanding techniques to expose bonding surfaces or structural anchor points<br>2.4 Rebuild damaged area and finish surfaces to meet repair quality standards<br>2.5 Take samples for testing and inclusion with documentation |
| 3. Review and document repairs            | 3.1 Produce accurate repair documentation that reflects repair process and outcomes<br>3.2 Review repair process and outcomes and make recommendations for process improvements to relevant personnel                                                                                                                                                                                           |

## Foundation Skills

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

- Numeracy skills to support repair scoping and application of repair processes.
- Reading skills to interpret manufacturer specifications and test reports.
- Writing and oral communication skills to report on repair outcomes and make process improvement recommendations.

*Other foundation skills essential to performance are explicit in the performance criteria of this unit of competency.*

## Unit Mapping Information

Supersedes and is equivalent to PMBTECH405 Repair damaged fibre-composites structures.

## Links

Companion Volume implementation guides are found in VETNet –

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=932aacef-7947-4c80-acc6-593719fe4090>

# Assessment Requirements for PMBTECH405E Repair damaged fibre-composites structures

## Modification History

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## Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and demonstrated the ability to:

- repair damaged fibre-composites structures at least once to meet quality standards.

## Knowledge Evidence

There must be evidence the candidate has knowledge of:

- repair techniques, including:
  - surface and part preparation
  - laminating, reinforcing and strengthening techniques
  - filling and joining techniques
  - surface preparation for paint, gelcoat and flowcoat
  - detailing for customer delivery
- rectification procedures for repair of marine, automotive, aerospace, industrial and architectural mouldings
- sources of product information to support repair assessment, including:
  - original manufacturer manual
  - structural repair manual
  - product release documentation or specifications
  - insurance documentation
  - other technical documentation
- types of documentation potentially required, including:
  - costing
  - legal
  - insurance.

## Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

## Links

Companion Volume implementation guides are found in VETNet – -

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