Australian Government

PMBTECH405 Repair damaged fibre-composites structures

Release: 1

PMBTECH405 Repair damaged fibre-composites structures

Modification History

Release 1. Supersedes and is equivalent to PMBTECH405B Repair damaged fibre-composites structures

Application

This unit of competency covers the skills and knowledge required to repair composite products with cosmetic or structural damage.

This unit of competency applies to advanced operators, technicians or those in similar roles who are required to identify, diagnose, and make repairs to products 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

PMBPROD247 Hand lay up composites

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	**Assess the product and damage**	1.1 Determine scope of repair required, such as either to original manufacturer specifications or other needs
		1.2 Select appropriate repair technique

		1.3	Consult testing reports giving recommended areas to be repaired and extent of damage if available
2	**Make repairs**	2.1	Examine the accessibility of the damaged section(s)
		2.2	Identify cosmetic repair areas and structural repair areas
		2.3	Consult original manufacturer's manual or structural repairs manual where available
		2.4	Consult product release documentation and insurance company requirements if available
		2.5	Prepare and clean up the product prior to commencing the actual repair
		2.6	Make partial mould or prepare insert moulding as required for the type of repair
		2.7	Expose bonding surfaces, and/or structural anchor points, using tapered sanding techniques as determined
		2.8	Rebuild the damaged area and finish surfaces to required standard
		2.9	Take samples for testing and inclusion with documentation as required
3	**Document the repair**	3.1	Raise repair documentation for costing, legal and insurance requirements as required
		3.2	Complete other documentation and records required

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
- 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:

- manufacturer supplied structural repair manuals
- release documentation, legal and insurance procedures for fibre reinforced plastic
- 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:

- hand tools used in the process
- 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:

- fumes/vapours
- 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