



Australian Government

PMBTECH407E Produce composite products using cored-laminate techniques

Release: 1

PMBTECH407E Produce composite products using cored-laminate techniques

Modification History

New unit.

Application

This unit describes the skills and knowledge required to produce cored-laminate composite (sandwich-structured) products using specialised materials in a general industry application.

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

The unit principally refers to the ability to apply laminating techniques to the structural engineering principles of beams and 'sandwich' panels.

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. Confirm product specification	1.1 Confirm physical and structural properties and other attributes required of product according to job specifications 1.2 Identify and apply relevant regulations, standards or codes of practice according to work health and safety regulations and workplace procedures 1.3 Create technical drawings to determine product size and shape using job specifications
2. Identify technical requirements	2.1 Determine laminate properties to meet job specifications 2.2 Select appropriate core materials, resin, matrix and other materials according to job specifications 2.3 Determine joints, attachment points and other special features

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	required according to job specifications 2.4 Determine lay-up technique to be used to meet job specifications
3. Develop specification for manufacturing product	3.1 Develop materials list for product according to job specifications 3.2 Develop manufacturing procedures and specifications according to workplace procedures 3.3 Complete required documentation according to workplace procedures
4. Produce product	4.1 Liaise with production staff to ensure specifications/procedures meet job specifications 4.2 Provide technical expertise to production team to optimise production process 4.3 Test product for function and quality against job specifications and document outcomes

Foundation Skills

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

- Numeracy skills to create accurate technical drawings with dimensional features.
- Writing and oral communication skills to produce and maintain procedural documentation and specifications, and communicate process improvements.

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

Unit Mapping Information

New unit.

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 PMBTECH407E Produce composite products using cored-laminate techniques

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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:

- produce composite products using cored-laminate techniques a least once to meet job specifications, and including:
 - development of technical/engineering drawings of products using either CAD (computer assisted design) technology or freehand sketching
 - communication of technical information verbally and in writing.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- principal construction techniques and the technical advantages of each
- material properties and their suitability for use as cores (PVC rigid foams, PU foams, SAN foams, linear PVC foams, plywood, balsa and honeycomb materials)
- layered or laminate structural behaviours
- typical process and product problems, including early warning signs, possible causes and corrective actions relating to:
 - failure modes
 - structural considerations and optimisation
 - strength problems
 - core shearing
 - bending
 - cost.

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.

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