



Australian Government

PMBTECH404E Mould composites with chemically-resistant or fire-retardant properties

Release: 1

PMBTECH404E Mould composites with chemically-resistant or fire-retardant properties

Modification History

Release 1. Unit code and title changed. Application changed. Elements and Performance Criteria changed. Range of Conditions removed. Assessment Requirements changed. Supersedes and is equivalent to PMBTECH404 Mould chemical resistant and/or fire retardant fibre-composites.

Application

This unit describes the skills and knowledge required to laminate special-purpose chemically-resistant and fire-retardant composite products in a production environment or on location.

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

The unit principally refers to an additional set of materials science knowledge gained by a technician in the context of prior experience relating to composites with thermoset resins and fibre, mat or fillers reinforcement.

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 specifications	1.1 Confirm conditions of use, job specifications and other special requirements of desired composite product 1.2 Obtain required authorisations of job specifications to enable product development to proceed
2. Select materials/process to produce desired composite product	2.1 Identify required laminate properties, resin, matrix and other materials from job specifications 2.2 Select production process to be followed that will produce product

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	that meets specifications 2.3 Implement measures to control identified hazards that may impact production processes 2.4 Produce trial samples as required and arrange testing of samples to ensure output meets requirements 2.5 Verify suitability of combination of materials and process against job specifications 2.6 Complete pre-operational checks according to workplace procedures
3. Lay-up or mould laminate	3.1 Correctly prepare and apply mould release to mould surface 3.2 Clean and prepare structure surface for adhesion 3.3 Apply laminate materials to mould or to structure 3.4 Inspect or test laminate surface to ensure output meets specifications 3.5 Make adjustments to remedy nonconforming outputs until desired output is achieved 3.6 Apply waste management strategies and adjust processes to minimise scrap and waste according to workplace procedures 3.7 Clean, adjust and lubricate equipment according to equipment instructions
4. Anticipate and solve process control variances	4.1 Recognise existing or potential process control variances and their causes 4.2 Determine, prioritise and implement remedial and preventative actions based on identified issues and causes 4.3 Monitor process control variances and corrective actions taken until resolved 4.4 Accurately maintain records and logbooks

Foundation Skills

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

- Reading skills to interpret and analyse product requirements.

- Writing and oral communication skills to record and report on process control variances.

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

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 PMBTECH404E Mould composites with chemically-resistant or fire-retardant properties

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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:

- mould composites with chemically-resistant and fire-retardant properties at least once to meet job specifications.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- types of materials, techniques and equipment used in the construction of:
 - chemically-resistant laminates
 - fire-retardant laminates
- application of special-purpose products across sectors and how these applications impact on product design, processes and materials requirements
- characteristics of materials, including those used for special-purpose products, and their behaviour in relation to process conditions and stages of production
- typical process and product problems, including early warning signs, possible causes and corrective actions
- hazards that may arise in the job or work environment, and:
 - their possible causes
 - potential consequences
 - appropriate risk controls.

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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