



Australian Government

Assessment Requirements for PMBPROD356 Construct moulds for composite products

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to PMBPROD356C Construct moulds for composite products

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and demonstrate the ability to:

- read and interpret procedures, job specifications, material labels, safety data sheets (SDS) and drawings
- plan the mould according to requirements
- plan and sequence steps to construct the mould
- prepare equipment, tools and materials to meet specifications
- construct, check/test and cure the mould
- monitor key variables, including:
 - actual and set temperatures
 - surface finish/appearance
 - fibre-to-resin ratios
 - times (including curing rates)
 - product weight and output rate product integrity and general conformance to specification
- make adjustments to remedy faults and non-conformity
- identify hazards and apply relevant hazard controls
- apply approvals procedures
- apply safety procedures
- apply housekeeping procedures
- apply waste management procedures
- recognise early warning signs of equipment/processes needing attention or with potential problems
- distinguish between causes of problems, including:
 - operational problems
 - equipment malfunction/wear
 - materials properties
 - raw material variations/contamination
 - procedural errors
- recognise and prioritise problems requiring action
- resolve routine and non-routine problems

- communicate effectively with team/work group and supervisors
- complete workplace records

do basic arithmetical manipulations, including additions, subtractions, divisions, fractions and percentages.

Knowledge Evidence

Must provide evidence that demonstrates knowledge relevant to their job sufficient to operate independently and to solve routine and non-routine problems, including knowledge of:

- common composite moulding processes and function and operating principles of the moulding equipment
- characteristics of materials and their behaviour in relation to moulding process conditions and stages of production
- moulding process variables that affect mould construction and materials
- product requirements that affect mould construction and materials
- possible options/adjustments in mould construction and materials and their impact on product quality and production output
- types, grades, uses, cure reaction of resins used to construct moulds, including
 - polyester resin
 - epoxy resin
 - vinylester resin
 - dicyclopentadiene (DCPD)
- types and role of catalysts, promoters and additives used with each type of resin
- types, role and properties of reinforcement materials, including
 - E Glass
 - S2 Glass
 - Carbon
 - Aramid
- effect of increasing fibre content on reducing thickness and flexural properties
- basic effect of proportion and direction of fibre orientation
- types of finish and binders
- quality requirements at each stage of construction
- factors which may affect mould quality and appropriate remedies
- non-routine problems that may arise, the range of possible causes and appropriate actions
- organisation procedures relevant to the work environment/job role
- hierarchy of control
- hazards that may arise in the job/work environment and:
 - their possible causes
 - potential consequences
 - appropriate risk controls.

Assessment Conditions

- The unit should be assessed holistically and the judgement of competence shall be based on a holistic assessment of the evidence.
- In all plants it may be appropriate to assess this unit concurrently with units such as:
 - teamwork
 - communication.
- Where the assessee does not currently possess evidence of competency in PMBPROD247 *Hand lay up composites* and PMBPREP201 *Prepare moulds for composites production*, one or both may be co-assessed with this unit.
- The collection of performance evidence:
 - should occur over a range of situations which include typical disruptions to normal, smooth operation of an operating plant
 - will typically include a supervisor/third-party report or other evidence, focussing on consistent performance and problem recognition and solving. A supervisor/third-party report must be prepared by someone who has a direct, relevant, current relationship with the person being assessed and who is in a position to form a judgement on workplace performance relevant to the unit of competency
 - must include the use of an appropriate industrial item of equipment requiring demonstration of operation, start and stop procedures and responding to problems
 - may use industry-based simulation for all or part of the unit particularly where safety, lack of opportunity or significant cost is an issue.
- Assessment should occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Assessment in a simulated environment should use evidence collected from demonstration of skills and one or more of:
 - walk-throughs
 - pilot plant operation
 - industry-based case studies/scenarios
 - 'what ifs'.
- Knowledge evidence may be collected concurrently with performance evidence or through an independent process, such as workbooks, written assessments or interviews.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.
- The regulatory framework will be reflected in workplace policies and procedures and is not required to be independently assessed.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.

- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- In addition the assessor or anyone acting in subject matter expert role in assessment shall demonstrate both technical competency and currency. If the assessor cannot demonstrate technical competency and currency they shall assess with a subject matter expert who does meet these requirements.
- Technical competence can be demonstrated through one or more of:
 - relevant VET or other qualification/Statement of Attainment
 - appropriate workplace experience undertaking the type of work being assessed under routine and non-routine conditions
 - appropriate workplace experience supervising/evaluating the type of work being assessed under routine and non-routine conditions
- Currency can be demonstrated through one or more of:
 - being currently employed undertaking the type of work being assessed
 - being employed by the organisation undertaking the type of work being assessed and having maintained currency in accordance with that organisation's policies and procedures
 - having consulted/had contact with an organisation undertaking the type of work being assessed within the last twelve months, the consultation/contact being related to assessment
 - conducting on the job training/assessments of the type of work being assessed
 - being an active member of a relevant professional body and participating in activities relevant to the assessment of this type of work.

Links

Companion Volume implementation guides are found in VETNet -

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