



Australian Government

**Assessment Requirements for MEM26002
Lay up composites using vacuum closed
moulding techniques**

Release: 1

Assessment Requirements for MEM26002 Lay up composites using vacuum closed moulding techniques

Modification History

Release 1. Supersedes and is equivalent to MEM26002A Lay up composites using vacuum closed moulding techniques

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- identifying and interpreting specifications, formulas/recipes, batch sheets, customer requests for laying up composites using vacuum closed moulding techniques
- selecting appropriate closed moulding techniques in accordance with specifications and procedures
- introducing resin infusion into mould by applying the following:
 - tack tape
 - bag (pleats and sits well)
 - inlet and outlet plumbing (connect/disconnect)
 - managing flow medium (e.g. cloth), cores, flow and gel times (relationship to positioning and spacing of lines)
 - managing and monitoring vacuum pressure
 - monitoring cure cycles
 - checking for leaks
- performing vacuum bagging by applying the following:
 - resin infusion data and protect bag from contamination
 - breather cloth/films
 - peel ply and achieving correct ply location and orientation
- identifying and rectifying any typical problems and monitoring curing cycles
- undertaking minor maintenance to equipment and ancillary equipment in accordance with procedures
- minimising wastage
- completing all documentation and reports, including items requiring further action, in accordance with SOPs.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- current state/territory work health and safety (WHS) legislation, standards and codes of practice relevant to using vacuum closed moulding techniques
- reinforcement and lay-up schedules (e.g. layers of reinforcement, direction and darts)
- release systems and processes
- tool sealing
- gel coating, times and working times
- sealing of mould (use of tack tape (e.g. butyl (or other) mastic and mechanical seals and clamps)
- vacuum and vacuum systems, adjustment and measurement, and vacuum control (e.g. switches, controls and regulators)
- resin systems applicable to process (e.g. vacuum infusion or vacuum bagging – polyester and epoxy)
- initiator/catalyst or hardener rates to temperature (hot/cold)
- free amine/amine blushes
- heat curing requirements and how it is done (e.g. ovens, hot bonders (blankets), and autoclaves) and heat curves
- TG (glass transition temperature)
- design briefs (e.g. tool design and part lines)
- Darcy's Law and its application to the flow of resins through porous media (e.g. reinforcing and cores).

Assessment Conditions

- Assessors must:
 - have vocational competency in laying up composites using vacuum closed moulding techniques at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires
- Where possible assessment must 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
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications

- 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.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>