



Australian Government

MEM26017 Prepare composite or other substrate surfaces

Release: 1

MEM26017 Prepare composite or other substrate surfaces

Modification History

Release 1. Supersedes and is equivalent to MEM26017A Prepare composite or other substrate surfaces

Application

This unit of competency defines the skills and knowledge required to prepare by abrasive or chemical means, a composite surface prior to bonding/joining or coating and includes the preparation of composite surfaces and other surfaces which are used in conjunction with composites (e.g. metal surfaces).

This unit complements unit MEM26016 Select and use joining techniques.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Band: A

Unit Weight: 4

Pre-requisite Unit

MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information

Competency Field

Composites

Elements and Performance Criteria

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
1	Determine job requirements	1.1	Follow standard operating procedures (SOPs)
		1.2	Comply with work health and safety (WHS) requirements at all times
		1.3	Select and use appropriate personal protective equipment (PPE) in accordance with SOPs

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	1.4 Identify the chemistry of materials to be applied to the surface 1.5 Identify the surface chemistry of the substrate 1.6 Determine any chemical treatments needed to make the substrate compatible with the materials to be applied 1.7 Interpret safety data sheets (SDS) for materials that may be used 1.8 Identify the current and possible required physical states of the substrate
2 Select most appropriate preparation technique for job	2.1 Compile specification for required substrate preparation 2.2 Compare possible substrate preparation methods with specification 2.3 Select most appropriate substrate preparation 2.4 Conduct and evaluate tests, as appropriate 2.5 Review selection and substrate preparation and make any required changes to substrate preparation
3 Prepare substrate	3.1 Identify and control hazards 3.2 Prepare substrate, as required and minimise waste 3.3 Review result compared to requirements 3.4 Review substrate preparation process 3.5 Identify areas for improvement and take appropriate actions 3.6 Clean up and perform any routine maintenance required on equipment 3.7 Complete any required documentation/reporting according to SOPs

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

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.

Most appropriate substrate preparation includes the following:

- compliance with product requirements
- greatest ease of preparation
- best financial return
- greatest sustainability contribution

Areas for improvement include one (1) or more of the following:

- incompatible surface applications with substrates
- non-uniform substrate preparation
- the use of hazardous materials

Sustainability includes the following:

- survival of the ecology/physical environment
- economic viability
- social sustainability

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for MEM26017 Prepare composite or other substrate surfaces

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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, safety data sheets (SDS) for preparing composite or other substrate surfaces
- considering all reasonably suitable substrate preparation methods when selecting and choosing the appropriate method
- selecting the most appropriate substrate preparation and conducting/organising relevant test and evaluating the test results and making any required changes, as appropriate
- preparing substrate, as required, controlling blasting equipment, operating blasting equipment by hand and using chemical treatment equipment in accordance with procedures
- identifying areas for improvement and taking appropriate action
- 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 preparing composite or other substrate surfaces
- methods and purposes of abrasive cleaning
- types of abrasives and their applications (e.g. sand, bead, shot, soda and grit)
- protection of non-blasted surfaces
- waste control, reuse and disposal
- hazards and the hierarchy of hazard control measures
- work health and safety (WHS) issues and environmental considerations
- surface preparation standards (e.g. surface measurement and surface finish)
- types of chemical cleaning (e.g. etching and solvents)

- aniline preparation of aluminium.

Assessment Conditions

- Assessors must:
 - have vocational competency in preparing composite or other substrate surfaces 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.

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