



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **PMBPROD251B Apply gel coat or other polymer surface finish**

**Revision Number: 1**

## **PMBPROD251B Apply gel coat or other polymer surface finish**

### **Modification History**

Not applicable.

### **Unit Descriptor**

#### **Unit descriptor**

This competency covers the application of gel coat, flow coat or similar surface finishes by hand or equipment and the resolving of routine problems to procedure.

### **Application of the Unit**

#### **Application of this unit**

This competency applies to operators who are required to undertake the routine application of gel coat, flow coat or similar surface finishes to composite products. It is typically performed by operators working either independently or as part of a work team.

The operator will:

- check raw materials are correct
- check product for quality and conformity to specifications
- notice any problems and takes required action (e.g. reporting)
- deal with non-conforming products, waste and scrap
- complete logs and reports.
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### **Licensing/Regulatory Information**

Not applicable.

## Pre-Requisites

### Prerequisites

This unit has **no** prerequisites.

## Employability Skills Information

### Employability Skills

This unit contains employability skills.

## Elements and Performance Criteria Pre-Content

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
Elements describe the essential outcomes of a unit of competency	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.

## Elements and Performance Criteria

<b>ELEMENT</b> ELEMENT	<b>PERFORMANCE CRITERIA</b> Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
1. Check work requirements.	1.1 Identify work requirements from production plan or request. 1.2 Check product, materials and equipment meet requirements for job(s). 1.3 Recognise requirements which may not be in accordance with usual practice. 1.4 Ask questions of appropriate person to confirm non standard job specifications. 1.5 Ensure housekeeping is to requirements. 1.6 Identify hazards associated with the job and take appropriate action.
2. Check set-up is according to specification.	2.1 Check raw materials are correct. 2.2 Check mould/surface for cracks, chips and cleanliness 2.3 Perform equipment and other pre-operational checks in accordance with procedures.
3. Apply coat as required.	3.1 Mix materials to procedures. 3.2 Check product is in specification and to required quality standard. 3.3 Apply materials as required. 3.4 Complete logs and records as required. 3.5 Collect and segregate waste, and other materials as required. 3.6 Pause equipment and perform emergency stop as required. 3.7 Keep equipment and work area clean.
4. Respond to routine problems in accordance with procedures.	4.1 Recognise known faults that occur during the operation. 4.2 Identify and take action on causes of routine faults in accordance with procedures. 4.3 Log problems as required. 4.4 Identify non-routine process and quality problems and take appropriate action.

## Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.

Application of an operational knowledge of the materials, equipment and process sufficient to recognise out of specification products, process problems and materials faults. For example, surface blemishes can be caused by improper catalyst ratios and improper air pressure, both high and low.

Knowledge and ability to implement the enterprise's procedures and relevant regulatory requirements, within appropriate time constraints and work standards.

Application of the knowledge of managing risks using the hierarchy of controls applied to the gel coat application process. Application of approved hazard control and safety procedures and the use of PPE in relation to handling materials, equipment operation and cleanup.

Knowledge of and skills in the operation of gel coat application methods and equipment:

- production workflow sequences and materials demand
- potential effects of variations in raw materials and equipment operation in relation to quality of product
- operation of gel coat application equipment and components
- function of gel coat in the composite products being manufactured
- importance of gel coat application to the standard of the finished work
- waste management and importance of reusing non-conforming products wherever possible
- correct selection and use of equipment, materials, processes and procedures
- accurately monitoring equipment operation and product quality
- factors which may affect product quality or production output and appropriate remedies.

Competence also includes the ability to:

- plan own work, including predicting consequences and identifying improvements
- identify when the operator is able to rectify faults, when assistance is required and who is the appropriate source for assistance
- identify and describe role and role of others involved directly in the process.

### Language, literacy and numeracy requirements

This unit requires the ability to read and interpret typical product specifications, job sheets, procedures, material labels and safety information as provided to operators.

Writing is required to the level of completing workplace forms.

Basic numeracy is required, eg to determine that two 25 kg bags are needed for 50 kg.

## Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

### Overview of assessment

A holistic approach should be taken to the assessment.

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

## **Critical aspects for assessment and evidence required to demonstrate competency in this unit**

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

- apply the required skills and knowledge in gel coat application
- apply approved procedures.

Consistent performance should be demonstrated. For example, look to see that:

- gel coating production standards are met consistently
- all safety procedures are followed.

### **Assessment method and context**

Assessment will occur on a gel coat application process and equipment and will be undertaken in a work-like environment.

Competence in this unit may be assessed:

- by using a gel coat application method or equipment requiring demonstration of operation and emergency stop procedures
- in a situation allowing for the generation of evidence of the ability to respond to problems
- by using a suitable simulation and/or a range of case studies/scenarios
- through a combination of these techniques.

In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

### **Specific resources for assessment**

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Access must be provided to appropriate learning and/or assessment support when required.

Where applicable, physical resources should include equipment modified for people with disabilities.

## **Range Statement**

### **RANGE STATEMENT**

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

**Context**

This competency covers the application of gel coat to specification, using manual application or spray equipment. It involves the application of gel coat to a mould as part of a manufacturing process. Where gel coating is not part of the manufacturing process, but a similar process occurs, then this unit should be customised to suit a similar coating process. It is not intended to cover repairs or patching work to the gel coat surface of products. It includes the operation of all relevant additional equipment where that equipment is integral to the process of applying gel coat.

**Procedures**

All operations are performed in accordance with procedures.

Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

**Tools and equipment**

This competency includes use of equipment and tools such as:

- measurement devices, such as depth gauges, containers, weighing machines, scales or meters
- hand application equipment including brushes
- spray equipment
- relevant personal protective equipment.

**Hazards**

Typical hazards include:

- hazardous materials and vapours
- manual handling
- stationary and moving machinery, parts and components.

**Problems**

Respond to routine problems means 'apply known solutions to a limited range of predictable problems'. Typical product problems may include:

- wrinkles and pinholes
- slow gel coat cure
- sagging of the gel coat
- porosity
- separation of colour
- discolouration.

Typical process problems may include:

- equipment problems, including spray blockage/build-up and wear and breakage
- poor mixing
- temperature variation
- catalyzation
- incomplete cure.

Appropriate action for non-routine problems may be reporting to designated person or other action specified in the procedures.

**Variables**

Key variables to be monitored include:

- thickness

- temperature
- air pressure
- surface finish
- product integrity and general conformance to specification.
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## **Unit Sector(s)**

Not applicable.