



Australian Government

Department of Education, Employment and Workplace Relations

MEM08015B Apply protective coatings (advanced)

Release: 1

MEM08015B Apply protective coatings (advanced)

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit applies to spraying pre-treatments and protective coatings including conventional, two pack, plural component.
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Application of the Unit

Application of the unit	<p>This unit is for use when an advanced level of skill is required. It includes inspection and interpretation of the results using all current industry knowledge and equipment. Test equipment included but not limited to Holiday and Pin Hole testing, wet and dry film thickness gauges, temperature, relative humidity and dew point, hardness, gloss, adhesion and cure testing and soluble salts.</p> <p>Reference is made to supplier information and specifications as well as accepted and appropriate Australian and international standards. All work and work practices undertaken to regulatory and legislative requirements.</p> <p>For application of basic single and two pack coatings not containing isocyanates, Unit MEM08014B (Apply protective coatings [basic]) should be selected.</p> <p>Band: A</p> <p>Unit Weight: 4</p>
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM08014B	Apply protective coatings (basic)
	MEM13003B	Work safely with industrial chemicals and materials

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine job requirements	1.1. Work requirements are determined from job sheet, instructions or other specifications in accordance with standard operating procedures. 1.2. Appropriate coating system and material is selected to meet job specification. 1.3. Appropriate coating process and equipment is selected to meet job specification. 1.4. Work site is prepared for surface coating activities.
2. Work piece prepared for application of protective coating	2.1. Surface condition is inspected for readiness for application of protective coating according to specification. 2.2. Unsuitable work pieces/surfaces and fabrication defects are identified and appropriate remedial action or reporting is undertaken in accordance with standard operating procedures. 2.3. Components are masked where protective coating application is not specified. 2.4. Conditions for overspray are identified.
3. Equipment is prepared for application of surface coating materials	3.1. Required plant and equipment basic operations are understood. 3.2. Routine maintenance is undertaken on plant and equipment in accordance with standard operating procedures. 3.3. Status/reports are recorded by proforma or orally in accordance with standard operating procedures. 3.4. Coating application equipment is assembled in accordance with equipment requirements and standard operating procedures. 3.5. Personal protective equipment is selected and maintained in accordance with manufacturers' specifications and standard operating procedures.
4. Apply coatings using conventional, airless and plural component equipment	4.1. Coating product type, solvent, uses, mixing procedure, clean-up and safety requirements are identified as appropriate. 4.2. Correct method of determining wet film thickness in accordance with specified dry film is demonstrated. 4.3. Coating material is thinned to suit the application method and to achieve required film thickness. 4.4. Coating is applied using specified application method and standard operating procedures.

ELEMENT	PERFORMANCE CRITERIA
	4.5. Coating application and curing technique is monitored according to standard operating procedures.
5. Clean and store equipment	5.1. Coating application equipment is cleaned, disassembled and inspected for damage. 5.2. Faulty equipment is recorded and reported to appropriate personnel in accordance with standard operating procedures. 5.3. Coating application equipment is stored in accordance with standard operating procedures.
6. Inspect finished surface	6.1. Surface finish is assessed for profile size differences and uses. 6.2. Coating thickness is determined using appropriate instruments and results are compared with job specifications. 6.3. Total surface is inspected for conformance to specification in accordance with standard operating procedures. 6.4. Inspection results are recorded and reported in accordance with standard operating procedures.
7. Calculate, estimate and cost application of protective coating	7.1. Surface area of work piece, materials, labour and equipment are assessed. 7.2. Cost of materials, labour, handling and equipment are determined. 7.3. Results are recorded and reported as an estimate for the application of a protective coating system.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- obtaining all relevant drawings, job sheets, specifications and instructions in accordance with work place procedures
- where appropriate, inspecting the surface(s) to be coated by the individual
- selecting correct coating system and material for the job surface and use

REQUIRED SKILLS AND KNOWLEDGE

- selecting correct coating process and equipment for applying the selected coating material
- preparing site with due regard to OH&S requirements including site safety, clear working space, other materials/structures/personnel in the vicinity, isolation of work site where required
- using standard workplace procedures to identify, select and apply the appropriate treatment or actions to rectify items with surface or fabrication defects
- identifying surfaces required as 'no paint areas' and protecting these using standard masking procedures and techniques
- undertaking precautions to prevent overspray in the workplace using standard procedures
- undertaking routine maintenance on plant and equipment in accordance with standard operating procedures
- preparing all required maintenance records/reports and communicating details
- assembling equipment in accordance with manufacturers' specifications and standard operating procedures
- selecting appropriate personal protective equipment and maintaining this in accordance with job requirements, manufacturers' specifications, OH&S requirements and standard operating procedures
- inspecting work piece and identifying any faults in accordance with standard operating procedures
- using workplace procedures for determining the wet film thickness of a coating from the specified dry film thickness
- calculating required thickness in accordance with product volume solids
- applying standard operating procedures for thinning coating materials and applying the specified film thickness coating to a substrate
- applying protective coating to comply with an established standard using specified methods and standard operating procedures
- controlling coating application and curing techniques using standard operating procedures
- undertaking disassembly, cleaning and checking for functionality of spraying equipment and associated items in accordance with standard operating procedures
- using standard operating procedures to report on any damage or faulty parts and communicating with appropriate personnel
- following procedure for storage including any hazard reduction and/or protection of equipment and components
- checking surface condition of the work piece, including profile size properties and problems according to standard operating procedures and other acceptable standards
- determining thickness using mechanical, electronic or other appropriate instruments
- comparing test results with job specifications, drawings etc.
- undertaking inspection comprehensively as required by standard operating

REQUIRED SKILLS AND KNOWLEDGE

procedures

- preparing all required inspection records/reports and communicating details
- using appropriate inspection and assessment methods
- undertaking calculations in accordance with standard operating procedures and specifications
- recording and reporting calculated costs in accordance with standard operating procedures

Required knowledge

Look for evidence that confirms knowledge of:

- work to be undertaken
- specifications applying to the work
- appropriate coating system and material required to meet job specification
- features of the various types of coating materials, including drying and curing requirements
- selection procedures for coating material
- appropriate coating process and equipment required for surface coating to meet job specification
- application features of the various types of coating materials and methods
- selection procedures for coating process and equipment, including conventional, airless and plural component
- awareness of other site factors that could be affected by the work
- deviation from specified surface finish/condition
- standard workplace procedures for identifying unsuitable work items
- method of locating areas to be protected from coating process and masked
- the areas subject to overspray and requiring protection
- operation of plant and equipment using standard operating procedures
- standard operating procedures for routine maintenance of plant end equipment
- requirements for completion and processing maintenance reports
- procedure for selecting and maintaining personal protective equipment
- inspection procedure
- unsuitable work pieces in consideration of job specifications
- the workplace procedures for determining wet film thickness of a coating from the specified dry film thickness
- calculations using a specified formulation
- standard operating procedures for thinning coating materials for use in applying the specified film thickness coating to a substrate
- standard operating procedures to apply protective coatings to comply with an established standard
- the procedures for controlling coating application and curing techniques
- standard operating procedure for disassembly, cleaning and checking

REQUIRED SKILLS AND KNOWLEDGE

- standard operating procedures for recording and reporting defective parts
- standard operating procedures for storage and protection of equipment
- standard operating procedures and other relevant standards for assessing the profile of the surface finish
- dry film thickness testing instruments
- standard operating procedures for surface inspection, including the extent and detail of inspection as required
- the requirements for completion and processing of inspection reports
- the standard methods and procedures for determining surface area of various shapes of materials
- standard procedures for calculating costs
- the standard operating procedures for recording and reporting calculated costs
- hazard and control measures associated with applying protective coatings (advanced), including housekeeping
- safe work practices and procedures

Evidence Guide

EVIDENCE GUIDE	
<p>The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p>	
<p>Overview of assessment</p>	<p>A person who demonstrates competency in this unit must be able to apply protective coatings (advanced). Competency in this unit cannot be claimed until all prerequisites have been satisfied.</p>
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.</p>
<p>Context of and specific resources for assessment</p>	<p>This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.</p> <p>This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with applying protective coatings (advanced) or other units requiring the exercise of the skills and knowledge covered by this unit.</p>
<p>Method of assessment</p>	<p>Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.</p>

EVIDENCE GUIDE

Guidance information for assessment	
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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. Bold italicised wording, if used in the performance criteria, is detailed below. 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) may also be included.

Unit Sector(s)

Unit sector	
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Surface finishing
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