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## BCCBS2001B

### Unit Descriptor

## Conduct tack coat spraying operations

This unit specifies the competency required to spray tack coat in asphalt or sprayed sealing operations to prepare for a bituminous surface (or next treatment) to be applied. It includes the minimum criteria for competency assessment.

This unit includes sprayers carried on a light truck or towed and spraying at an agreed application rate in a uniform manner.

### Employability Skills

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

### Element

Elements define the essential outcomes of a unit of competency.

### Performance Criteria

Performance criteria specify the level of performance required to demonstrate achievement of the element.

#### 1 Plan and prepare

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allotted task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
- 1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
- 1.4 Tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

#### 2 Prepare for spraying operations

- 2.1 Pre-operational checks are carried out in accordance with organisation, manufacturer or site authorised procedures
- 2.2 Tank is checked for cleanliness and contaminants prior to filling, ensuring transfer connections are completed and fully functional
- 2.3 All loading and unloading operations are conducted safely in accordance with manufacturers' or company instructions

- |   |   |  |
|---|---|--|
| 2 | Prepare for spraying operations (continued) | 2.4 Spray tank is filled and adequate materials made available to perform spray operations   |
|   |   | 2.5 Application rate is identified and translated into the relevant travel speed and pump characteristics where necessary                                |
|   |   | 2.6 Jets are selected and fitted to spray bar to enable spraying operations  |
| 3 | Spray tack coat                             | 3.1 Spraying techniques are selected and modified to meet changing work conditions   |
|   |   | 3.2 Spraying operations are conducted, controlled and monitored to ensure that materials are sprayed to specification                                    |
|   |   | 3.3 Operations adjacent to traffic are carried out in accordance with authorised traffic management controls in a safe manner at all times               |
|   |   | 3.4 Work is completed in accordance with the agreed plan and outcomes within the operating capacities of the allocated equipment                         |
| 4 | Operate hand lance                          | 4.1 Situations where hand spraying is required are determined  |
|   |   | 4.2 Hand lance is inspected to ensure the equipment is safe and operating correctly  |
|   |   | 4.3 Spray jets are inspected and set for job   |
|   |   | 4.4 Hand spraying operations are conducted, controlled and monitored to ensure that materials are sprayed to specification                               |
|   |   | 4.5 Hand spraying operations adjacent to traffic are carried out in accordance with authorised traffic management controls in a safe manner at all times |
|   |   | 4.6 Hand spraying equipment is cleaned and stored after use as per company instructions  |
| 5 | Operator maintenance and clean up           | 5.1 Inspection and fault finding is conducted in accordance with manufacturers' or organisational requirements   |
|   |   | 5.2 Spray bars and lances are cleaned and jets are free of contaminants  |
|   |   | 5.3 Tank is emptied and cleaned of bituminous products, in accordance with EPA and company procedures  |

- |   |   |     |   |
|---|---|-----|---|
| 5 | Operator maintenance and clean up (continued) | 5.4 | Routine operational servicing and lubrication tasks are carried out to manufacturers'/organisational requirements                             |
|   |   | 5.5 | Minor maintenance is carried out to manufacturers' or organisational requirements   |
|   |   | 5.6 | Records are maintained in accordance with site requirements including identification of potential and current equipment problems              |
|   |   | 5.7 | Work is performed to the requirements of the organisation's environmental instructions and EPA standards                                      |
|   |   | 5.8 | Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan                           |
|   |   | 5.9 | Tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices |

## Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit

### Unit scope

- Tack coat sprayers may be a mechanical bitumen sprayer or a truck/trailer mounted bitumen emulsion sprayer used to apply tack coat at a specified rate on a pavement surface. They also provide facilities for hand spraying
- Types of surfaces to be tack coated are to include but not be limited to spray seal, asphalt, concrete and may include granular pavement
- Pavement is limited to a clean dry surface which may be coated day or night
- Prescribed rates of application are to be followed within specified tolerances
- Tack coating is applied in preparation for further surface coatings which are to include but not be limited to asphalt, geo-textile and slurry
- Bitumen emulsion may include but not be limited to cationic and anionic
- Tack coat spraying operations does not include a mechanical bitumen sprayer

**Unit scope (continued)**

- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements
- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas
- Site locations may include but not be limited to car parks, airport runways, container yards, hard stands, footpaths, bikeways and roadways

**Safety (OH&S)**

- OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances
- Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with high voltage power lines, uneven/unstable terrain, trees, overhead service lines, bridges, surrounding buildings, obstructions, structures, facilities, dangerous materials, recently filled trenches, other machines, personnel, traffic control, working at heights, working in proximity to others, worksite visitors and the public
- Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement
- Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices
- Hazards and risks may include but not be limited to uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials
- Emergency procedures related to equipment operation are to include but may not be limited to emergency shutdown and stopping, extinguishing equipment fires, organisational first aid requirements and evacuation

<b>Environmental Requirements</b>	<ul style="list-style-type: none"> <li>Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management</li> </ul>
<b>Quality Requirements</b>	<ul style="list-style-type: none"> <li>Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction</li> </ul>
<b>Statutory/Regulatory Authorities</b>	<ul style="list-style-type: none"> <li>State/Regulatory Authorities may include Federal, State and Local Authorities</li> </ul>
<b>Tools and equipment</b>	<ul style="list-style-type: none"> <li>Tools and equipment are to include but not limited to trucks, tanks, spraying equipment, hand lances, transfer hoses, brooms, jets, shovels and may include compressors, paper and storage tanks</li> </ul>
<b>Materials</b>	<ul style="list-style-type: none"> <li>Materials are to include but not limited to bitumen emulsions (cationic and anionic) and may include cutback bitumen, cutters, distillates and water</li> </ul>
<b>Communications</b>	<ul style="list-style-type: none"> <li>Communications are to include but not limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li> </ul>
<b>Information</b>	<ul style="list-style-type: none"> <li>Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, material safety data sheets (MSDS), diagrams or sketches</li> <li>Safe work procedures or equivalent related to the tack coat spraying operations</li> <li>Regulatory/legislative requirements pertaining to the tack coat spraying operations</li> <li>Manufacturers' specifications and instructions</li> <li>Organisation work specifications and requirements.</li> <li>Instructions issued by authorised organisational or external personnel</li> <li>Relevant Australian Standards and Austroads</li> <li>AAPA advisory notes and codes of practice</li> </ul>

## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- A minimum of 500m<sup>2</sup> of an existing pavement to be tack coated prior to asphaltting using the spray bar, completed in a minimum of two separate runs
- A minimum of two areas of at least 20m<sup>2</sup> to be tack coated using a hand lance
- Safe and effective operational use of tools and equipment
- Communication and working effectively and safely with others

### Relationship to other units

- Pre-requisite units are:  
BCCCM1001C Follow OH&S policies and procedures  
  
Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role



**Specific knowledge required to achieve the performance criteria**

- A knowledge of
  - Site and equipment safety requirements
  - Equipment types, characteristics, technical capabilities and limitations
  - Operational and maintenance procedures
  - Bituminous surfacing operations
  - Site isolation and traffic control responsibilities and authorities
  - Bituminous products
  - Tack coat spraying techniques
  - Processes for the calculation of material requirements, application rates and travel speed
  - Materials Safety Data Sheets and materials handling methods
  - Project quality requirements
  - Civil construction terminology
  - JSA's/Safe work method statements

**The context of assessment**

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

**Methods of assessment**

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

**Specific resource requirements for this unit**

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to spraying tack coat
  - hand and power tools and equipment appropriate to spraying tack coat
  - specifications and work instructions

**... End ...**

**BCCBS2002B****Unit Descriptor****Hand spread asphalt**

This unit specifies the competency required to hand spread asphalt to the required line and level for a finished surface. It relates to hand asphalt spreading and levelling conducted before and after compaction. It includes the minimum criteria for competency assessment.

This unit includes joint construction and working in conjunction with an asphalt paver.

**Employability Skills**

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

**Element**

Elements define the essential outcomes of a unit of competency.

**Performance Criteria**

Performance criteria specify the level of performance required to demonstrate achievement of the element.

**1 Plan and prepare**

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allotted task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
- 1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
- 1.4 Tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

- |   |                |     |   |
|---|----------------|-----|---|
| 2 | Spread asphalt | 2.1 | Hand spreading is conducted in safe proximity to the paver  |
|   |                | 2.2 | Asphalt is hand placed to required level and line   |
|   |                | 2.3 | Even finish is achieved when raking and joints are constructed to correct level   |
|   |                | 2.4 | Low spots, high spots and defects are identified and repaired in the mat  |
|   |                | 2.5 | Faults in the mat detected prior to or during operations are identified and reported  |
|   |                |     |   |
| 3 | Clean up       | 3.1 | Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan                           |
|   |                | 3.2 | Tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices |

### Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

**Unit scope**

- Asphalt spreading is to include but not be limited to constructing new work, repairing surfaces, repair of defects, paver runs and joints
- Asphalt is to include but not be limited to dense graded, open graded and may include stone mastic
- Defects to be rectified in the paver run may include but not be limited to bumps, segregation, blemishes, bony materials and voids
- Joints are to include but not be limited to longitudinal, transverse, hot to hot and cold to hot
- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements
- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas
- Site locations may include but not be limited to car parks, airport runways, container yards, hard stands, footpaths, bikeways and roadways
- Areas adjacent to the work area may include but not be limited to nature strips, driveways, footpaths, shoulders, drains, kerb and channel

**Safety (OH&S)**

- OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances
- Safe spreading may include but not be limited to procedures minimising strain and fatigue, adherence to site traffic plans, precautions taken when working close to traffic, awareness of rollers and other vehicles working in the area
- Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with uneven/unstable terrain, trees, bridges, surrounding buildings, obstructions, structures, facilities, dangerous materials, recently filled trenches, other machines, personnel, traffic control, working in proximity to others, worksite visitors and the public
- Hazards and risks may include but not be limited to uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials
- Emergency procedures related to equipment operation are to include but may not be limited to extinguishing equipment fires, organisational first aid requirements and evacuation
- Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices

**Environmental Requirements**

- Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management

**Quality Requirements**

- Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction

**Statutory/Regulatory Authorities**

- State/Regulatory Authorities may include Federal, State and Local Authorities

- |                            |   |
|----------------------------|---|
| <b>Tools and equipment</b> | <ul style="list-style-type: none"><li>• Tools and equipment are to include but not limited to rakes, brooms, shovels and depth gauges and may include straight edges, shovel baths, spirit levels and string lines</li></ul>  |
| <b>Materials</b>           | <ul style="list-style-type: none"><li>• Materials are to include but not limited to asphalt and release agents and may include emulsion, slurry and Styrene Butadiene Styrene modified binders (SBS) handled and used in accordance with the Australian Asphalt Paving Association (AAPA) code of practice for SBS modified binders</li></ul>   |
| <b>Communications</b>      | <ul style="list-style-type: none"><li>• Communications are to include but not limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li></ul>  |
| <b>Information</b>         | <ul style="list-style-type: none"><li>• Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, maps, material safety data sheets (MSDS) and diagrams or sketches</li><li>• Safe work procedures or equivalent related to the hand spreading of asphalt</li><li>• Regulatory/legislative requirements pertaining to the hand spreading of asphalt</li><li>• Manufacturers' specifications and instructions</li><li>• Organisation work specifications and requirements.</li><li>• Instructions issued by authorised organisational or external personnel</li><li>• Relevant Australian Standards and Austroads</li><li>• AAPA advisory notes and codes of practice</li></ul> |

## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- A minimum of 5m<sup>2</sup> of asphalt (per patch) to line and level is to be hand spread without segregation:
  - two patches over 50mm thick, each with a different type of asphalt
  - two patches under 50mm thick, each with a different type of asphalt
- Work with a paver to lay a minimum of 100 lineal metres of longitudinal joint and two transverse joints
- Safe and effective operational use of tools and equipment
- Communication and working effectively and safely with others

### Relationship to other units

- Pre-requisite units are:  
BCCCM1001C Follow OH&S policies and procedures  
  
Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role



**Specific knowledge required to achieve the performance criteria**

- A knowledge of
  - Site and equipment safety requirements
  - Equipment types, characteristics and limitations
  - Operational and maintenance procedures
  - Hand spreading asphalt
  - Site isolation and traffic control responsibilities and authorities
  - The properties of asphalt
  - The AAPA code of practice for working with SBS modified binders
  - Processes for the calculation of material requirements
  - Materials Safety Data Sheets and materials handling methods
  - Project quality requirements
  - Civil construction terminology
  - JSA's/Safe work method statements

**The context of assessment**

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

**Methods of assessment**

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

**Specific resource requirements for this unit**

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to hand spreading asphalt
  - hand and power tools and equipment appropriate to hand spreading asphalt
  - specifications and work instructions

**... End ...**

**BCCBS2003B****Unit Descriptor****Safely handle bituminous materials**

This unit specifies the competency required to safely handle bituminous materials for the construction and maintenance of pavements. It includes the minimum criteria for competency assessment.

This unit includes safety and handling requirements for the heating and blending application of bituminous materials

**Employability Skills**

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

**Element**

Elements define the essential outcomes of a unit of competency.

**Performance Criteria**

Performance criteria specify the level of performance required to demonstrate achievement of the element.

**1 Plan and prepare**

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allotted task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
- 1.3 Tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.4 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

- |   |   |   |
|---|---|---|
| 2 | Work safely with bituminous materials   | 2.1 Characteristics and uses of bituminous materials and additives used in surfacing are identified   |
|   |   | 2.2 Hazards associated with working with hot bitumen are identified and minimisation strategies are implemented                                   |
|   |   | 2.3 Australian Asphalt Paving Association (AAPA) code of practice for working with Styrene Butadiene Styrene (SBS) modified binders is adhered to |
|   |   | 2.4 Fire precautions associated with hot bitumen as detailed in Austroads Bitumen Sealing Safety Guide are adhered to                             |
|   |   | 2.5 Information including OH&S is extracted from material safety data sheet associated with bituminous materials and applied                      |
|   |   | 2.6 Work is performed to the requirements of the organisation's environmental policy and EPA standards  |
| 3 | Demonstrate first aid for bitumen burns | 3.1 First aid is performed in the case of a bitumen burn in accordance with Austroads Bitumen Sealing Safety Guide                                |
|   |   | 3.2 'Bitumen Burn Tag' is attached to victims of burns who are to be treated off site in accordance with Austroads Bitumen Sealing Safety Guide   |
| 4 | Clean up                                | 4.1 Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan                           |
|   |   | 4.2 Tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices |

## Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

<b>Unit scope</b>	<ul style="list-style-type: none"> <li>• Minimising the risk of hazards are to include but not be limited to temperature control, correct product changeover procedures, correct mixing/blending procedures, avoiding the presence of water in hot bitumen, avoiding fumes, exposure to heat, static electricity, fires, burns and the safe handling of flammable substances</li> <li>• Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements</li> <li>• Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas</li> <li>• Site locations may include but not be limited to car parks, airport runways, container yards, hard stands, footpaths, bikeways and roadways</li> </ul>
<b>Safety (OH&amp;S)</b>	<ul style="list-style-type: none"> <li>• OH&amp;S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances</li> <li>• Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with uneven/unstable terrain, trees, bridges, surrounding buildings, obstructions, structures, facilities, dangerous materials, recently filled trenches, other machines, personnel, traffic control, working in proximity to others, worksite visitors and the public</li> <li>• Hazards and risks may include but not be limited to uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials</li> <li>• Emergency procedures are to include but may not be limited to extinguishing fires, organisational first aid requirements and evacuation</li> <li>• Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices</li> </ul>
<b>Environmental Requirements</b>	<ul style="list-style-type: none"> <li>• Environmental requirements are to include but are not limited to organisational/project environmental</li> </ul>

	management plan, waste management, water quality protection, noise, vibration, dust and clean-up management
<b>Quality Requirements</b>	<ul style="list-style-type: none"><li>• Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction</li></ul>
<b>Statutory/Regulatory Authorities</b>	<ul style="list-style-type: none"><li>• State/Regulatory Authorities may include Federal, State and Local Authorities</li></ul>
<b>Tools and equipment</b>	<ul style="list-style-type: none"><li>• Tools and equipment are to include but not be limited to infrared thermometers, hazchem signs and water finding paste</li></ul>
<b>Materials</b>	<ul style="list-style-type: none"><li>• Materials are to include but not be limited to bituminous materials (bitumen, cutback bitumen products, emulsions, asphalt, slurries, additives, fluxes, cutters) and may include aggregates, SBS modified binders, polymers and geo-synthetic products</li></ul>
<b>Communications</b>	<ul style="list-style-type: none"><li>• Communications are to include but not limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li></ul>
<b>Information</b>	<ul style="list-style-type: none"><li>• Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, maps, material safety data sheets (MSDS) and diagrams or sketches</li><li>• Burns card</li><li>• Safe work procedures or equivalent related to the safe handling of bituminous materials</li><li>• Regulatory/legislative requirements pertaining to the safe handling of bituminous materials</li><li>• Manufacturers' specifications and instructions</li><li>• Organisation work specifications and requirements.</li><li>• Instructions issued by authorised organisational or external personnel</li><li>• Relevant Australian Standards and Austroads</li><li>• AAPA advisory notes and codes of practice</li></ul>

## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- A minimum of five major hazards associated with handling bituminous materials are reported
- A minimum of four bituminous materials are stored and used together
- Burn first aid is applied to a minimum of one simulated burn and tagged accordingly
- A minimum of one simulated fire involving a bituminous substance is extinguished
- Communication and working effectively and safely with others

### Relationship to other units

- Pre-requisite units are:  
BCCCM1001C Follow OH&S policies and procedures  
  
Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

**Specific knowledge required to achieve the performance criteria**

- A knowledge of
  - Site and equipment safety requirements
  - Bituminous materials
  - SBS modified binders
  - Material safety data sheet requirements
  - Equipment types, characteristics, capabilities and limitations
  - Operational and maintenance procedures
  - Site isolation responsibilities and authorities
  - Processes for the calculation of material requirements
  - Materials handling methods
  - Project quality requirements
  - Civil construction terminology
  - JSA's/Safe work method statements

**The context of assessment**

- The application of competency is to be assessed in the workplace or realistically simulated workplace.
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context.
- Assessment is to comply with relevant regulatory or Australian Standards requirements.



**Methods of assessment**

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

**Specific resource requirements for this unit**

- The following resources should be made available:
  - workplace location or simulated workplace for the safe handling of bituminous materials
  - bituminous materials
  - personal protective equipment, fire fighting and first aid equipment appropriate for handling bituminous materials
  - specifications and work instructions

**... End ...**



## BCCBS2004B operations

### Unit Descriptor

## Conduct aggregate spreader box

This unit specifies the competency required to spread aggregate as part of the construction of a sprayed seal using a spreader box attached to a tip truck. It includes the minimum criteria for competency assessment.

This unit includes truck based and hand applied aggregate spreading.

### Employability Skills

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

### Element

Elements define the essential outcomes of a unit of competency.

### Performance Criteria

Performance criteria specify the level of performance required to demonstrate achievement of the element.

#### 1 Plan and prepare

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allotted task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
- 1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
- 1.4 Cut on/cut off paper is placed in preparation for bitumen spraying and at the end of the spray run
- 1.5 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.6 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

- |   |  |   |
|---|--|---|
| 2 | Set up and disconnect spreader box         | <p>2.1 Equipment is connected to the truck in accordance with the manufacturers' and site requirements prior to operation</p> <p>2.2 Spreader box is set to required width</p> <p>2.3 Spreader box operation is checked to ensure correct operation</p> <p>2.4 Spreader box calibration is checked as conforming to job specifications</p> <p>2.5 Spreader box is disconnected after operation in accordance with manufacturers' recommended procedures</p> <p>2.6 Truck is checked to ensure that it is completely free of spreader and the spreader has all connecting parts correctly positioned for transportation or further use</p> |
| 3 | Spread aggregate                           | <p>3.1 Communication with the truck driver is established</p> <p>3.2 Size of aggregate is checked and recorded prior to spreading</p> <p>3.3 Cut on/cut off paper is removed in preparation for aggregate spreading</p> <p>3.4 Opening and closing of the spreader box is co-ordinated accurately with speed and application of aggregate</p> <p>3.5 Driver is instructed to adjust speed, line or angle of body as required to suit operations</p> <p>3.6 Spread rate is monitored and adjustments made ensuring aggregate is spread to specifications</p> <p>3.7 Spreading is completed within specifications</p>                       |
| 4 | Perform hand spreading and spotting duties | <p>4.1 Uniformity of run is checked and corrected as required</p> <p>4.2 Correct hand spreading method is used to specifications</p>  |
| 5 | Clean up                                   | <p>5.1 Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan</p> <p>5.2 Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices</p>  |

## Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

### Unit scope

- Types of sprayed seal are to include but not be limited to seals, primers seals and emulsion seals and may include gritting of primes, bleeding seals and rack in seals
- Aggregate is to be applied on a sprayed bituminous material
- Monitoring and adjustment to spreading is to include but not be limited to spreading started and finished on cut on/cut off paper, correct speed, adjustment of tray angle to ensure smooth flow of aggregate, correct line followed, aggregate spread at a uniform rate, stones do not bounce or scatter, over spreading or under spreading is corrected, over spread and under spread areas are identified and repaired, blockages in spreader are cleared quickly or truck directed off spreading area, and areas where sprayer has missed marked and reported
- Correct operation of the spreader box is to include but not be limited to box is securely in place, there is no spillage over side of box or tailgate, gates work smoothly and aggregate flows smoothly
- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements
- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas
- Site locations may include but not be limited to car parks, airport runways, container yards, hard stands, footpaths, bikeways and roadways

**Safety (OH&S)**

- OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances
- Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement
- Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with uneven/unstable terrain, trees, pits, poles, trip hazards, dirt mounds, overhead service lines, bridges, surrounding buildings, obstructions, structures, facilities, dangerous materials, recently filled trenches, other machines, personnel, traffic control, working in proximity to others, worksite visitors and the public
- Hazards and risks may include but not be limited to uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials
- Emergency procedures related to equipment operation are to include but may not be limited to emergency shutdown and stopping, extinguishing equipment fires, organisational first aid requirements and evacuation
- Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices

**Environmental Requirements**

- Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management

**Quality Requirements**

- Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction

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<b>Statutory/Regulatory Authorities</b>	<ul style="list-style-type: none"><li>• State/Regulatory Authorities may include Federal, State and Local Authorities</li></ul>
<b>Tools and equipment</b>	<ul style="list-style-type: none"><li>• Tools and equipment are to include but not limited to manual spreader boxes, remote controlled spreader boxes (preferred method), shovels, hand brooms, drag brooms, measuring equipment and may include calibration test equipment, ride on spreader boxes and spreader boxes with rollers</li></ul>
<b>Materials</b>	<ul style="list-style-type: none"><li>• Materials are to include but not limited to aggregate and cut on/cut off paper</li></ul>
<b>Communications</b>	<ul style="list-style-type: none"><li>• Communications are to include but not limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li></ul>
<b>Information</b>	<ul style="list-style-type: none"><li>• Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, maps, material safety data sheets (MSDS) and diagrams or sketches</li><li>• Safe work procedures or equivalent related to the aggregate spreader box operations</li><li>• Regulatory/legislative requirements pertaining to the aggregate spreader box operations</li><li>• Manufacturers' specifications and instructions</li><li>• Organisation work specifications and requirements.</li><li>• Instructions issued by authorised organisational or external personnel</li><li>• Relevant Australian Standards and Austroads</li><li>• AAPA advisory notes and codes of practice</li></ul>

## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- A minimum of four transverse paper joints are placed, picked up and disposed of
- A minimum of six truck loads of at least two different aggregate are spread to the design application rate. It must include three runs of wings, tapers and turning lanes on at least three sites varying in complexity
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

### Relationship to other units

- Pre-requisite units are:  
BCCCM1001C Follow OH&S policies and procedures  
  
Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role



**Specific knowledge required to achieve the performance criteria**

- A knowledge of
  - Site and equipment safety requirements
  - Sprayed seal types
  - Aggregate types and sizes
  - Spreader box operations
  - Equipment types, characteristics, technical capabilities and limitations
  - Operational, maintenance and basic diagnostic procedures for the spreader box
  - Site isolation and traffic control responsibilities and authorities
  - Processes for the calculation of material requirements, application rates and travel speed
  - Materials Safety Data Sheets and materials handling methods
  - Project quality requirements
  - Civil construction terminology
  - JSA's/Safe work method statements

**The context of assessment**

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

**Methods of assessment**

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

**Specific resource requirements for this unit**

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to aggregate spreading operations
  - hand and power tools, plant and equipment appropriate to aggregate spreading operations
  - specifications and work instructions

**... End ...**

## BCCBS2005B operations

### Unit Descriptor

## Roll aggregate in sprayed sealing

This unit specifies the competency required to roll aggregate in sprayed sealing operations to embed the aggregate in to the binder for finalisation of the wearing surface. It includes the minimum criteria for competency assessment.

This unit includes the operation of a roller.

### Employability Skills

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

### Element

Elements define the essential outcomes of a unit of competency.

### Performance Criteria

Performance criteria specify the level of performance required to demonstrate achievement of the element.

#### 1 Plan and prepare

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allotted task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
- 1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
- 1.4 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

#### 2 Prepare for rolling of aggregate

- 2.1 Pre-operational checks are carried out in accordance with manufacturers' or company procedures
- 2.2 Appropriate traffic control measures for spreading operation are put in place
- 2.3 Site is inspected and potential hazards are planned for
- 2.4 Tyres are inflated to correct pressure
- 2.5 Work schedule is developed and followed

- |   |                |  |
|---|----------------|--|
| 3 | Roll aggregate | 3.1 Roller is operated to required rolling patterns  |
|   |                | 3.2 Quality of surface is monitored and faults reported  |
|   |                | 3.3 Safe distance is maintained from other vehicles  |
|   |                | 3.4 Rolling speed is controlled to suit operations   |
| 4 | Clean up       | 4.1 Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan                                  |
|   |                | 4.2 Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices |

## Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

### Unit scope

- Rolling aggregate is to include but not be limited to the use of a self propelled, multi wheel pneumatic tyred roller and may include the use of a drag broom
- Surfaces for rolling are to include but not be limited to primerseal or seal
- Rolling patterns are to include but not be limited to rolling as close to aggregate spreader as is safe for first run, rolling in a straight line, rolling in direction of traffic flow unless instructed otherwise, rolling to pre-determined pattern ensuring uniform coverage of full length and width of cover, maintaining required speed (starts slow then increases speed, smooth start up and stop), and not turning or stopping on newly sealed surface
- Faults in the surface may include but not be limited to missed areas, light or heavy spread areas, corrugations, uncovered binder, and binder pick up
- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements

**Unit scope (continued)**

- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas
- Site locations may include but not be limited to car parks, airport runways, container yards, hard stands, footpaths, bikeways and roadways

**Safety (OH&S)**

- OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances
- Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement
- Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with uneven/unstable terrain, trees, pits, poles, dirt mounds, overhead service lines, bridges, surrounding buildings, obstructions, structures, facilities, dangerous materials, recently filled trenches, other machines, personnel, traffic control, working in proximity to others, worksite visitors and the public
- Hazards and risks may include but not be limited to uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials
- Emergency procedures are to include but may not be limited to extinguishing fires, organisational first aid requirements and evacuation
- Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices

**Environmental Requirements**

- Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management

<b>Quality Requirements</b>	<ul style="list-style-type: none"><li>• Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction</li></ul>
<b>Statutory/Regulatory Authorities</b>	<ul style="list-style-type: none"><li>• State/Regulatory Authorities may include Federal, State and Local Authorities</li></ul>
<b>Tools and equipment</b>	<ul style="list-style-type: none"><li>• Tools and equipment are to include but not limited to a self propelled multi wheel pneumatic tyred rollers or combination rollers</li></ul>
<b>Materials</b>	<ul style="list-style-type: none"><li>• Materials are to include but not limited to primerseals or seals and aggregates</li></ul>
<b>Communications</b>	<ul style="list-style-type: none"><li>• Communications are to include but not limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li></ul>
<b>Information</b>	<ul style="list-style-type: none"><li>• Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, maps, material safety data sheets (MSDS) and diagrams or sketches</li><li>• Safe work procedures or equivalent related to the operation of rolling aggregate in sprayed sealing</li><li>• Regulatory/legislative requirements pertaining to the operation of rolling aggregate in sprayed sealing</li><li>• Manufacturers' specifications and instructions</li><li>• Organisation work specifications and requirements.</li><li>• Instructions issued by authorised organisational or external personnel</li><li>• Relevant Australian Standards and Austroads</li><li>• AAPA advisory notes and codes of practice</li></ul>

## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- A minimum of three separate projects of at least 5000m<sup>2</sup> each are to be rolled
- A minimum of three restricted access projects selected from a car park, sub-division, turning lane, intersection, corner and a cul-de-sac are to be rolled
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

### Relationship to other units

- Pre-requisite units are:

BCCCM1001C Follow OH&S policies and procedures

Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

**Specific knowledge required to achieve the performance criteria**

- A knowledge of
  - Site and equipment safety requirements
  - Self propelled multi wheel pneumatic tyred roller or combination roller operations
  - Sprayed sealing operations
  - Aggregate types and sizes
  - Primerseal and seal materials
  - Equipment types, characteristics, technical capabilities and limitations
  - Operational, maintenance and basic diagnostic procedures
  - Site isolation and traffic control responsibilities and authorities
  - Processes for the calculation of material requirements, application rates and travel speed
  - Materials Safety Data Sheets and materials handling methods
  - Project quality requirements
  - Civil construction terminology
  - JSA's/Safe work method statements

**The context of assessment**

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

**Methods of assessment**

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential



underpinning knowledge

- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above
- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to rolling aggregate in sprayed sealing operations
  - hand and power tools, plant and equipment appropriate to rolling aggregate in sprayed sealing operations
  - specifications and work instructions

**... End ...**

**Specific resource  
requirements for this unit**



**BCCBS2006B****Conduct pavement sweeping operations****Unit Descriptor**

This unit specifies the competency required to sweep pavement surfaces in preparation for bituminous surfacing operations. It includes the minimum criteria for competency assessment.

This unit includes drawn brooms, tractor mounted brooms, truck mounted brooms and broom attachments on various types of equipment.

**Employability Skills**

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

**Element**

Elements define the essential outcomes of a unit of competency.

**Performance Criteria**

Performance criteria specify the level of performance required to demonstrate achievement of the element.

**1 Plan and prepare**

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allotted task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
- 1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
- 1.4 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

- 2      Sweep surfaces
  - 2.1    Broom core is checked for wear
  - 2.2    Wind direction is identified and a sweeping plan is developed to minimise the creation of dust
  - 2.3    Broom is operated at a speed and pressure that ensures maximum sweeping effect and minimum damage to bristles
  - 2.4    Sweeping is extended 300 mm (minimum) outside the area to be covered, where possible
  - 2.5    Preliminary and final sweeps are carried out where there is excessive material
  - 2.6    Material is swept away from work in progress and away from newly finished work
  - 2.7    Correct sweeping procedures are used to suit surface type
  - 2.8    Loose aggregate is removed from newly sealed surface according to job specifications and without damage
- 3      Clean up
  - 3.1    Sweepings are deposited to avoid contamination drains, pits or nature strips
  - 3.2    Windrows are created to protect drains from run off due to overnight rain
  - 3.3    Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan
  - 3.4    Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices

## Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

### Unit scope

- Pavement sweeping operations are to include but not be limited to surface preparation for bituminous surfaces and removal of loose aggregate
- Sweeping plans are to include but not be limited to noting wind direction and methods to minimise dust blowing on to the seal, neighbouring properties, vehicular traffic and other work in the vicinity
- Types of surfaces to be swept are to include but not be limited to prior to primer or primersealing, sweeping a primed surface, sealed or asphalt surface and removing loose aggregate and may include sweeping a concrete surface
- Traffic control signage may include but not be limited to escort vehicle, highway traffic signs, site safety signage, temporary signage for the benefit of motorists and pedestrians, and traffic conditions signage
- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements
- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas
- Site locations may include but not be limited to car parks, airport runways, container yards, hard stands, footpaths, bikeways and roadways

**Safety (OH&S)**

- OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances
- Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement
- Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with uneven/unstable terrain, trees, pits, poles, trip hazards, dirt mounds, overhead service lines, bridges, surrounding buildings, obstructions, structures, facilities, dangerous materials, recently filled trenches, other machines, personnel, traffic control, working in proximity to others, worksite visitors and the public
- Hazards and risks may include but not be limited to uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials
- Emergency procedures related to equipment operation are to include but may not be limited to emergency shutdown and stopping, extinguishing equipment fires, organisational first aid requirements and evacuation
- Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices

<b>Environmental Requirements</b>	<ul style="list-style-type: none"> <li>Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management</li> </ul>
<b>Quality Requirements</b>	<ul style="list-style-type: none"> <li>Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction</li> </ul>
<b>Statutory/Regulatory Authorities</b>	<ul style="list-style-type: none"> <li>State/Regulatory Authorities may include Federal, State and Local Authorities</li> </ul>
<b>Tools and equipment</b>	<ul style="list-style-type: none"> <li>Tools and equipment may include but not limited to a tractors, skid steer loaders, trucks, drawn brooms and attachments to various items of equipment</li> </ul>
<b>Materials</b>	<ul style="list-style-type: none"> <li>Materials are to include but not limited to broom cores</li> </ul>
<b>Communications</b>	<ul style="list-style-type: none"> <li>Communications are to include but not limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li> </ul>
<b>Information</b>	<ul style="list-style-type: none"> <li>Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, maps, material safety data sheets (MSDS) and diagrams or sketches</li> <li>Safe work procedures or equivalent related to the pavement sweeping operations</li> <li>Regulatory/legislative requirements pertaining to the pavement sweeping operations</li> <li>Manufacturers' specifications and instructions</li> <li>Organisation work specifications and requirements.</li> <li>Instructions issued by authorised organisational or external personnel</li> <li>Relevant Australian Standards and Austroads</li> <li>AAPA advisory notes and codes of practice</li> </ul>

## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality assurance requirements
- A minimum of 2000m<sup>2</sup> are to be swept on each of three projects, including primerseal or priming, to job specifications
- A minimum of 2000m<sup>2</sup> are to be swept on each of three projects, including asphalt or sealed or slurry, to job specifications
- A minimum of 2000m<sup>2</sup> are to be swept on each of three projects removing loose aggregate from newly completed primerseal or seal, to job specifications
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

### Relationship to other units

- Pre-requisite units are:  
 BCCCM1001C Follow OH&S policies and procedures  
 Operators must be qualified/licensed to use the plant/vehicle to which the broom attachments are connected  
 Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role



**Specific knowledge required to achieve the performance criteria**

- A knowledge of
  - Site and equipment safety requirements
  - Pavement sweeping operations
  - Operating platforms for use with mounted broom attachments
  - Primerseal, seal, asphalt and aggregate materials
  - Equipment types, characteristics, technical capabilities and limitations
  - Operational, maintenance and basic diagnostic procedures
  - Site isolation and traffic control responsibilities and authorities
  - Processes for the calculation of material removal, sweeping patterns and travel speed
  - Materials Safety Data Sheets and materials handling methods
  - Project quality requirements
  - Civil construction terminology
  - JSA's/Safe work method statements

**The context of assessment**

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

**Methods of assessment**

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

**Specific resource requirements for this unit**

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to pavement sweeping operations
  - hand and power tools, plant and equipment appropriate to pavement sweeping operations
  - specifications and work instructions

**... End ...**

## BCCBS2007B surfacing

### Unit Descriptor

## Take samples of materials used in road

This unit specifies the competency required to collect samples of materials used in the bituminous surfacing industry to ensure the material is representative of the product delivered. It includes the minimum criteria for competency assessment.

This unit includes taking samples using identified procedures, it does not apply to laboratory activities associated with testing the sample.

### Employability Skills

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

### Element

Elements define the essential outcomes of a unit of competency.

### Performance Criteria

Performance criteria specify the level of performance required to demonstrate achievement of the element.

#### 1 Plan and prepare

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allotted task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
- 1.3 Tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.4 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

- |   |              |     |   |
|---|--------------|-----|---|
| 2 | Take samples | 2.1 | Suitable clean containers with tight fitting lids are obtained  |
|   |              | 2.2 | Sample is taken in accordance with approved procedure/job instructions/Australian Standards/Austroads test methods                        |
|   |              | 2.3 | Sample is handled, labelled and stored in accordance with approved procedure/job instructions/Australian Standards/Austroads test methods |
|   |              | 2.4 | Safety precautions for obtaining and handling hot samples are adhered to  |

- |   |          |     |   |
|---|----------|-----|---|
| 3 | Clean up | 3.1 | Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan                           |
|   |          | 3.2 | Tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices |

## Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

### Unit scope

- Sample sources are to include but not be limited to bulk storage, tanker, on site, drums or stock piles
- Sample reporting and labelling is to include but not be limited to type of material taken, number of samples taken, where samples were taken from (including identifying number of container or vehicle), specific job requirements, size of sample required, identification mark, date of sampling, supplier name, delivery docket details, name of sample taker and may include quantity of materials represented by the sample
- Handling requirements for samples are to include but not be limited to non contamination by other bituminous materials, solvents or cleaning materials, not reheating samples, sample container being tightly sealed immediately when the cold sample is placed in it, sample container may not be immersed in solvent or wiped with solvent saturated cloth, and spilled materials on the outside of the container are to be wiped off with a clean dry cloth immediately after sealing
- Safe handling of samples is to include but not be limited to no smoking, gloves and safety glasses worn while sampling and sealing containers, where sampling valves or outlets are used the sampler should stand to the windward side and as far from the outlet as possible, samples to be taken slowly to prevent splashing, and container placed on a firm flat surface to prevent spilling or splashing
- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements

- |                                   |  |
|-----------------------------------|--|
| <b>Unit scope (continued)</b>     | <ul style="list-style-type: none"><li>• Site locations may include but not be limited to car parks, airport runways, container yards, hard stands, footpaths, bikeways and roadways</li></ul>  |
| <b>Safety (OH&amp;S)</b>          | <ul style="list-style-type: none"><li>• OH&amp;S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances</li><li>• Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with uneven/unstable terrain, pits, trip hazards, obstructions, structures, dangerous materials, recently filled trenches, plant and equipment, personnel, traffic control, working in proximity to others, worksite visitors and the public</li><li>• Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices</li><li>• Hazards and risks may include but not be limited to uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials</li><li>• Emergency procedures are to include but may not be limited to extinguishing fires, organisational first aid requirements and evacuation</li></ul> |
| <b>Environmental Requirements</b> | <ul style="list-style-type: none"><li>• Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, dust and clean-up management</li></ul>   |
| <b>Quality Requirements</b>       | <ul style="list-style-type: none"><li>• Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction</li></ul>  |

<b>Statutory/Regulatory Authorities</b>	<ul style="list-style-type: none"> <li>• State/Regulatory Authorities may include Federal, State and Local Authorities</li> </ul>
<b>Tools and equipment</b>	<ul style="list-style-type: none"> <li>• Tools and equipment are to include but not limited to sample containers (tins, hessian bags, plastic bags), labels and marking pens and may include tags, string and wire</li> </ul>
<b>Materials</b>	<ul style="list-style-type: none"> <li>• Materials may include but not limited to aggregates, hot bitumen, bitumen emulsion, modified bitumen, additives, slurries, pre-coated materials, cutters, cutback bitumens, flux oils and asphalt</li> </ul>
<b>Communications</b>	<ul style="list-style-type: none"> <li>• Communications are to include but not limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li> </ul>
<b>Information</b>	<ul style="list-style-type: none"> <li>• Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, maps, material safety data sheets (MSDS), diagrams or sketches</li> <li>• Safe work procedures or equivalent related to the taking of sample materials used in road surfacing</li> <li>• Regulatory/legislative requirements pertaining to the taking of sample materials used in road surfacing</li> <li>• Manufacturers' specifications and instructions</li> <li>• Organisation work specifications and requirements.</li> <li>• Instructions issued by authorised organisational or external personnel</li> <li>• Relevant Australian Standards and Austroads</li> <li>• AAPA advisory notes and codes of practice</li> </ul>

## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- Sample of bituminous materials to be taken include:
  - At least one sample of an aggregate material;
  - At least one sample of either asphalt or slurry;
  - Each of the above to be taken from each of a container, site and stock pile
- Safe and effective operational use of tools and equipment
- Communication and working effectively and safely with others

### Relationship to other units

- Pre-requisite units are:
  - BCCCM1001C Follow OH&S policies and procedures
  - BCCBS2003B Safely handle bituminous materials
- Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role



**Specific knowledge required to achieve the performance criteria**

- A knowledge of
  - Site and equipment safety requirements
  - Bituminous materials
  - Sampling techniques
  - Site isolation and traffic control responsibilities and authorities
  - Materials Safety Data Sheets and materials handling methods
  - Project quality requirements
  - Civil construction terminology
  - JSA's/Safe work method statements

**The context of assessment**

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

**Methods of assessment**

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

**Specific resource requirements for this unit**

- The following resources should be made available:
  - workplace location or simulated workplace
  - all materials which can be sampled in bituminous surfacing operations
  - tools and equipment appropriate to sampling materials
  - specifications and work instructions

**... End ...**

**BCCBS2008B****Unit Descriptor****Conduct road maintenance operations**

This unit specifies the competency required to operate the equipment of a road maintenance unit to apply bituminous materials for the repair of existing pavement surfaces. It includes the minimum criteria for competency assessment.

This unit includes the repairing of potholes, uneven and stripped surfaces undertaking digging out and replacing of bitumen or asphalt, crack and edge repair, compacting, hand lancing, hand screeding and using a jack hammer. It does not include driving the truck.

**Employability Skills**

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

**Element**

Elements define the essential outcomes of a unit of competency.

**Performance Criteria**

Performance criteria specify the level of performance required to demonstrate achievement of the element.

**1 Plan and prepare**

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details relevant to the tasks are obtained, confirmed and applied to the allotted task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
- 1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
- 1.4 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

- |   |                                |  |
|---|--------------------------------|--|
| 2 | Set up road maintenance unit   | 2.1 Pre-operational checks are carried out in accordance with organisation, manufacturer or site authorised procedures       |
|   |                                | 2.2 Operating components of the truck are checked for serviceability   |
|   |                                | 2.3 Tank is checked for prevention of contamination  |
|   |                                | 2.4 Tank is filled with the required materials to perform repair operations  |
|   |                                | 2.5 Standard mix of emulsion and/or type of asphalt is determined ready for application                                      |
| 3 | Repair damaged surfaces        | 3.1 Start up, park, shut down procedures are carried out in accordance with manufacturers' and site requirements             |
|   |                                | 3.2 Truck is positioned forward of the damaged areas to be repaired  |
|   |                                | 3.3 Area to be repaired is cleaned free of dust and debris   |
|   |                                | 3.4 Equipment is selected as appropriate to the defective area requiring repair  |
|   |                                | 3.5 Defective area is prepared for resurfacing or filling  |
|   |                                | 3.6 Resurfacing or filling of the damaged area is completed  |
|   |                                | 3.7 Repaired surface is finished ready for use   |
|   |                                | 3.8 Material quantities and additives are measured, calculated and recorded for each site                                    |
|   |                                | 3.9 Repairing operations are conducted, controlled and monitored to ensure that materials are placed to specification        |
| 4 | Carry out operator maintenance | 4.1 Fault finding inspections are conducted in accordance with manufacturers' specifications and organisational requirements |
|   |                                | 4.2 Equipment and the asphalt storage hopper are maintained in good working order  |
|   |                                | 4.3 Routine operational servicing and lubrication tasks are carried out to manufacturers' and organisational requirements    |
|   |                                | 4.4 Equipment condition reports and records are maintained in accordance with organisational requirements                    |

- |   |          |     |  |
|---|----------|-----|--|
| 5 | Clean up | 5.1 | Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan                                  |
|   |          | 5.2 | Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices |

## Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

### Unit scope

- A road maintenance unit is a purpose built truck fitted with a hopper, conveyor belt, tank, spreader, tools and equipment for the repair of pavement defects, set up to carry bitumen emulsion, cutback bitumen, aggregate, cold mix, asphalt, granular pavement material, tools and equipment required to prepare, fill, level and compact pavement defects
- Defective surfaces are to include but not be limited to pot holes, uneven, stripped or worn small areas requiring resurfacing, sunken trenches, kerb and channel joints, cracks and other minor defects
- Road maintenance operations are to include but not be limited to loading and unloading materials, cleaning damaged areas, digging out and replacing asphalt or bitumen surfaces, hand spreading asphalt, hand screeding, jack hammering, edge preparation ready for replacement surface, hand lancing emulsion, compacting with a vibrating plate and cleaning the truck sticking surfaces with distillate
- Pavement is limited to a clean dry surface which may be patched by day or night
- Prescribed rates of application are to be followed within specified tolerances
- Bitumen emulsion may include but not be limited to cationic and anionic

**Unit scope (continued)**

- Asphalt types may include those selected as appropriate to the circumstances and/or pavement
- Maintaining of records is to include but not be limited to necessary calculations for quantities, rates of application achieved and a repair record for each site
- Surfaces are to include but not be limited to spray sealed roads and asphaltic concrete pavement
- Traffic control signage may include but not limited to on unit signage, escort vehicle, highway traffic signs, site safety signage, temporary signage for the benefit of motorists and pedestrians, and traffic conditions signage
- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements
- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas
- Site locations may include but not be limited to roads, streets, car parks, airport runways, container yards, hard stands, footpaths, bikeways and roadways

**Safety (OH&S)**

- OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances
- Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices
- Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with uneven/unstable terrain, trees, pits, poles, trip hazards, dirt mounds, overhead service lines, bridges, surrounding buildings, obstructions, structures, facilities, dangerous materials, recently filled trenches, other machines, personnel, traffic control, working in proximity to others, worksite visitors and the public

<b>Safety (OH&amp;S) continued</b>	<ul style="list-style-type: none"><li>• Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement</li><li>• Hazards and risks may include but not be limited to uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials</li><li>• Emergency procedures related to equipment operation are to include but may not be limited to emergency shutdown and stopping, extinguishing equipment fires, organisational first aid requirements and evacuation</li></ul>
<b>Environmental Requirements</b>	<ul style="list-style-type: none"><li>• Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management</li></ul>
<b>Quality Requirements</b>	<ul style="list-style-type: none"><li>• Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction</li></ul>
<b>Statutory/Regulatory Authorities</b>	<ul style="list-style-type: none"><li>• State/Regulatory Authorities may include Federal, State and Local Authorities</li></ul>
<b>Tools and equipment</b>	<ul style="list-style-type: none"><li>• Tools and equipment are to include but not be limited to a road maintenance unit (truck) and all of its attachments, hoses, watering cans, hand lances, rakes, shovels, vibrating plates, jack hammers and brooms</li></ul>
<b>Materials</b>	<ul style="list-style-type: none"><li>• Materials are to include but not be limited to bitumen emulsions, asphalts, aggregates, water and cleaning agents</li></ul>
<b>Communications</b>	<ul style="list-style-type: none"><li>• Communications are to include but not limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li></ul>

**Information**

- Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, maps, material safety data sheets (MSDS) and diagrams or sketches
- Safe work procedures or equivalent related to the conducting of road maintenance operations
- Regulatory/legislative requirements pertaining to the conducting of road maintenance operations
- Manufacturers' specifications and instructions
- Organisation work specifications and requirements
- Instructions issued by authorised organisational or external personnel
- Relevant Australian Standards and Austroads
- AAPA advisory notes and codes of practice



## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- Completion of road maintenance operations for a minimum of 50m<sup>2</sup> of road surface defects by loading and mixing the specified materials, applying all of the road maintenance unit equipment and repairing the damaged areas to specification
- Completion of all records of repair work undertaken and materials used for each site
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

### Relationship to other units

- Pre-requisite units are:  
BCCCM1001C Follow OH&S policies and procedures
- Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

**Specific knowledge required to achieve the performance criteria**

- A knowledge of
  - Site and equipment safety requirements
  - Bitumen/asphalt repair procedures
  - Bituminous materials and their characteristics
  - Pavement defects
  - Bituminous surfacing operations
  - Processes for heating bitumen
  - Equipment types, characteristics, technical capabilities and limitations
  - Operational, maintenance and basic diagnostic procedures
  - Site isolation and traffic control responsibilities and authorities
  - Processes for the calculation of material requirements, application rates and travel speed
  - Materials Safety Data Sheets and materials handling methods
  - Project quality requirements
  - Civil construction terminology
  - JSA's/Safe work method statements

**The context of assessment**

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

**Methods of assessment**

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

**Specific resource requirements for this unit**

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to road maintenance operations
  - hand and power tools, plant and equipment appropriate to road maintenance operations
  - specifications and work instructions

**... End ...**



**BCCBS3001B****Unit Descriptor****Conduct profile planer operations**

This unit specifies the competency required to plane and remove layers of material from a surface. It includes the minimum criteria for competency assessment.

The unit covers planning and preparation for work, the conduct of operational checks, the safe and effective operation of the profile planer for a range of mandatory tasks, the fitting and removal of attachment parts, use and removal of attachments, operator maintenance activities and the loading/unloading of the profile planer onto a trailer or float.

**Employability Skills**

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

**Element**

Elements define the essential outcomes of a unit of competency.

**Performance Criteria**

Performance criteria specify the level of performance required to demonstrate achievement of the element.

**1 Plan and prepare**

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allotted task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
- 1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
- 1.4 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

**2 Conduct profile planer pre-operational checks**

- 2.1 Pre-start, start up, park and shut down procedures are carried out in accordance with manufacturers' and/or site specific requirements
- 2.2 Profile planer controls and functions, including implements or other attachments, brakes and manoeuvrability are checked for serviceability and any faults are rectified or reported

- |   |   |   |
|---|---|---|
| 3 | Operate profile planer                        | 3.1 Site hazards associated with profile planer operations are identified and safe operating techniques are used to minimise risk   |
|   |   | 3.2 Operating techniques for profile planer are identified and applied to achieve optimum output in accordance with manufacturers' design specifications while achieving specified tolerances |
|   |   | 3.3 Profile planer is operated to work instructions in accordance with company operating procedures   |
|   |   | 3.4 Profile planer is operated to remove material to an agreed line and level within specified tolerances   |
| 4 | Select, remove and fit attachments            | 4.1 Attachment for the task is selected   |
|   |   | 4.2 Attachment is removed and fitted according to manufacturers' manual and site requirements   |
|   |   | 4.3 Attachment is tested to ensure correct fitting and operation as specified in manufacturers' manual  |
|   |   | 4.4 Attachment is used in accordance with manufacturers' recommendations and design limits  |
|   |   | 4.5 Removed attachments are cleaned and stored in designated location   |
| 5 | Relocate the profile planer                   | 5.1 Profile planer is moved safely between work sites, observing relevant codes and traffic management requirements   |
|   |   | 5.2 Profile planer is prepared for relocation in accordance with the manufacturers' specifications  |
| 6 | Carry out profile planer operator maintenance | 6.1 Profile planer is safely parked, prepared for maintenance and shut down as per manufacturers' manual and organisational requirements  |
|   |   | 6.2 Inspection and fault finding are conducted in accordance with manufacturers' specifications and/or organisational requirements  |
|   |   | 6.3 Defective parts are removed and replaced safely and effectively according to manufacturers' manual and organisational requirements  |
|   |   | 6.4 Regular programmed maintenances tasks are carried out in accordance with manufacturers' and/or organisational requirements  |

- |   |          |     |   |
|---|----------|-----|---|
| 7 | Clean up | 7.1 | Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan   |
|   |          | 7.2 | Profile planer, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices |

## Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

### Unit scope

- A profile planer is a self propelled wheeled or tracked machine designed for the purpose of in-situ milling of construction materials. The profile planer also transfers the milled materials via conveyor to storage or tip trucks
- Profile planer tasks are to include the removal/excavation of materials to a thickness and a line/level, loading of trucks and stockpiling
- Profile planer tasks may include mixing materials, levelling and pulverising
- Attachments are to include additional or interchangeable conveyor systems
- Operations may include asphalt pavement milling, edge planing, straight work and confined work (such as intersection, carpark etc)
- Operator maintenance is to include cleaning, authorised servicing and the monitoring, recording and reporting of faults. It may also include the conduct of authorised minor replacements and the provision of assistance to maintenance personnel during maintenance and repair activities

**Safety (OH&S)**

- OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances
- Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices
- Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with underground and overhead services, other machines, personnel, traffic control, working in proximity to others, worksite visitors and the public
- Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/ profile planer is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement
- Hazards and risks may include but not be limited to uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, structures and hazardous materials
- Emergency procedures related to equipment operation are to include but may not be limited to emergency stop, fire fighting, medical and first aid and evacuation

**Environmental Requirements**

- Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management

**Quality Requirements**

- Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction



<b>Statutory/Regulatory Authorities</b>	<ul style="list-style-type: none"><li>• State/Regulatory Authorities may include Federal, State and Local Authorities</li></ul>
<b>Materials</b>	<ul style="list-style-type: none"><li>• Materials may include but are not limited to soil, granular materials, asphalt, concrete and rock</li><li>• Rock types may include metamorphic, igneous and sedimentary</li></ul>
<b>Tools and equipment</b>	<ul style="list-style-type: none"><li>• Tools and equipment are to include hand tools and maintenance equipment relevant to the particular profile planer</li></ul>
<b>Communications</b>	<ul style="list-style-type: none"><li>• Communications are to include but not be limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li><li>• On site meeting processes may include notification/scheduling (time, place, purpose), task discussions and local coordination of procedural and operational issues</li></ul>
<b>Information</b>	<ul style="list-style-type: none"><li>• Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, maps, material safety data sheets (MSDS), diagrams or sketches and graphics</li><li>• Safe work procedures related to the operation of profile planers on construction sites</li><li>• Regulatory/legislative requirements pertaining to profile planer operations and the environment</li><li>• Manufacturers' specifications and instructions</li><li>• Organisation work specifications and requirements.</li><li>• Instructions issued by authorised organisational or external personnel</li><li>• Relevant Australian Standards</li><li>• AAPA advisory notes and codes of practice</li></ul>

## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### **Critical aspects of evidence required to demonstrate competency in this unit**

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- The conduct of profile planer operations are to be performed in a minimum of two different material types/surfaces types and are to include the mandatory tasks of removal/excavation of materials to a thickness and a line/level, loading of trucks and stockpiling
- Operations including asphalt pavement, milling, edge planing, straight work and confined work (such as intersection, car park etc)
- The application of emergency procedures
- The conduct of authorised operator maintenance
- Communication and working effectively and safely with others

### **Relationship to other units**

- Pre-requisite units are:  
  
BCCCM1001C Follow OH&S policies and procedures  
  
Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

**Specific knowledge required to achieve the performance criteria**

- A knowledge of
  - Profile planer types, characteristics, technical capabilities and limitations
  - Basic soil types and characteristics
  - Basic principles of soil compaction
  - Site and equipment safety requirements
  - Profile planer techniques related to essential tasks
  - Processes for interpreting engineering drawings and sketches
  - Operational, maintenance and basic diagnostic procedures
  - Site isolation and traffic control responsibilities and authorities
  - Materials Safety Data Sheets and materials handling methods
  - Project quality requirements
  - Civil construction terminology
  - Methods of changing machine attachments
  - Safe operating techniques in all terrain
  - Basic earthworks calculations
  - JSA's/Safe work method statements

**The context of assessment**

- The application of competency is to be assessed in the workplace or realistically simulated construction site
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

**Methods of assessment**

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge

- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above
- The following resources should be made available:
  - workplace location or simulated workplace
  - an operational profile planer with appropriate attachment/parts
  - realistic tasks covering the mandatory task requirements
  - a trailer or float appropriate to the profile planer
  - maintenance materials appropriate to the profile planer equipment
  - specifications and work instructions

**Specific resource  
requirements for this unit**

**... End ...**

**BCCBS3002B****Unit Descriptor****Conduct paver screeding operations**

This unit specifies the competency required to operate a paver screed to spread and compact asphalt, slurry or other materials to a specified line and level for surfacing of pavement. It includes the minimum criteria for competency assessment.

This unit includes the operation of the screed, use of electronic levelling equipment and checking of the mat for thickness prior to compacting.

**Employability Skills**

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

**Element**

Elements define the essential outcomes of a unit of competency.

**Performance Criteria**

Performance criteria specify the level of performance required to demonstrate achievement of the element.

**1 Plan and prepare**

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allotted task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
- 1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
- 1.4 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

**2 Set up paver screed**

- 2.1 Equipment is set to the correct levels to lay material to specifications
- 2.2 Electronic levelling equipment is set to check level
- 2.3 Heating controls for screed are set to specifications
- 2.4 Screed controls are set for correct operation

- |   |                      |  |
|---|----------------------|--|
| 3 | Operate paver screed | 3.1 Site hazards associated with paver screeding operations are identified and safe operating techniques are used to minimise risk                       |
|   |                      | 3.2 Screed is adjusted during operation to ensure work remains within specifications   |
|   |                      | 3.3 Faults in the mat are identified and correct action is undertaken to rectify faults  |
|   |                      | 3.4 Work of rake hands and rollers is monitored to ensure they are keeping up with the paver   |
|   |                      | 3.5 Communication is maintained with paver operator monitoring the progress of the job   |
|   |                      | 3.6 Paver operator is notified of problems with the mat  |
|   |                      | 3.7 Operator maintenance is performed in accordance with manufacturers' or company instructions  |
| 4 | Clean up             | 4.1 Waste material is handled/disposed of safely in accordance with requirement of regulatory bodies, OH&S, MSDS and EPA                                 |
|   |                      | 4.2 Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan                                  |
|   |                      | 4.3 Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices |

## Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

### Unit scope

- Setting up the screed is to include but not be limited to use of boards to correct the height for transverse joint construction, setting up string lines and sensors to job specifications, adjusting machine attachments to string line, preparing and setting a screed to achieve a specified level and texture of asphalt
- Paver screed operations are to include but not be limited to uniform flow of asphalt, electronic/manual levelling, auguring, width of the screed, adjustment of the crown, control of burners, hot and cold transverse and longitudinal joints, manual screed level control and automatic screed level control
- Automatic screed levelling devices may include but not be limited to grade sensors/averaging sensors, matching shoes, levelling beams, sonic, contact and laser
- Surfaces are to include but not be limited to formed/prepared roads, pads, sealed, primersealed, primed, asphalt and may include profiled, profile concrete and slurry
- Asphalt screeding tasks are to include but not be limited to spreading bituminous materials, mixing materials and spreading granular materials, it may include spreading concrete materials
- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements
- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas
- Site locations may include but not be limited to car parks, airport runways, container yards, hard stands, footpaths, bikeways and roadways

**Safety (OH&S)**

- OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances
- Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement
- Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with uneven/unstable terrain, overhead service lines, surrounding buildings, obstructions, structures, facilities, dangerous materials, recently filled trenches, other machines, personnel, traffic control, working in proximity to others, worksite visitors and the public
- Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices
- Hazards and risks may include but not be limited to uneven/unstable terrain, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials
- Emergency procedures related to equipment operation are to include but may not be limited to emergency shutdown and stopping, extinguishing fires, organisational first aid requirements and evacuation



<b>Environmental Requirements</b>	<ul style="list-style-type: none"> <li>Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management</li> </ul>
<b>Quality Requirements</b>	<ul style="list-style-type: none"> <li>Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction</li> </ul>
<b>Statutory/Regulatory Authorities</b>	<ul style="list-style-type: none"> <li>State/Regulatory Authorities may include Federal, State and Local Authorities</li> </ul>
<b>Tools and equipment</b>	<ul style="list-style-type: none"> <li>Tools and equipment are to include but not limited to paver screeds, shovels, measuring tapes, depth gauges, standard tool kits, string lines, thermometers and a straight edges</li> </ul>
<b>Materials</b>	<ul style="list-style-type: none"> <li>Materials are to include but not limited to aggregates, gravel asphalt and may include granular materials</li> </ul>
<b>Communications</b>	<ul style="list-style-type: none"> <li>Communications are to include but not limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li> </ul>
<b>Information</b>	<ul style="list-style-type: none"> <li>Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, maps, material safety data sheets (MSDS), diagrams or sketches and graphics</li> <li>Safe work procedures or equivalent related to the paver screeding operations</li> <li>Regulatory/legislative requirements pertaining to the paver screeding operations</li> <li>Manufacturers' specifications and instructions</li> <li>Organisation work specifications and requirements.</li> <li>Instructions issued by authorised organisational or external personnel</li> <li>Relevant Australian Standards and Austroads</li> <li>AAPA advisory notes and codes of practice</li> </ul>

## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### **Critical aspects of evidence required to demonstrate competency in this unit**

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- The conduct of paver screeding operations are to be performed in a minimum of two different bituminous material types/surface types and are to include the mandatory tasks:
  - three longitudinal joints (of at least 100m) to be constructed to required thickness, uniformity, line and level, on both matching and unsupported edge in accordance with project specifications and/or work instructions
  - six transverse joints to be constructed to required thickness, uniformity, line and level, on both matching and unsupported edge in accordance with project specifications and/or work instructions
  - five sections of straight paving (one of at least 100 linear metres) to required thickness, uniformity, line and level, on both matching and unsupported edge in accordance with project specifications and/or work instructions
  - three intersections to required thickness, uniformity, line and level, on both matching and unsupported edge in accordance with project specifications and/or work instructions
  - one of the above tasks to include at least one mode of automatic screed levelling
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

- 
- |  |   |
|--|---|
| <b>Relationship to other units</b>                                     | <ul style="list-style-type: none"><li>• Pre-requisite units are:<br/><br/>BCCCM1001C Follow OH&amp;S policies and procedures</li><li>• Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role</li></ul>  |
| <b>Specific knowledge required to achieve the performance criteria</b> | <ul style="list-style-type: none"><li>• A knowledge of<ul style="list-style-type: none"><li>- Site and equipment safety requirements</li><li>- Paver screed operations</li><li>- Aggregate types and sizes</li><li>- Bituminous materials</li><li>- Longitudinal and transverse joints</li><li>- Equipment types, characteristics, technical capabilities and limitations</li><li>- Operational, maintenance and basic diagnostic procedures</li><li>- Site isolation and traffic control responsibilities and authorities</li><li>- Processes for the calculation of material uniformity and travel speed</li><li>- Materials Safety Data Sheets and materials handling methods</li><li>- Project quality requirements</li><li>- Civil construction terminology</li><li>- Safe operating techniques in all terrain</li><li>- JSA's/Safe work method statements</li></ul></li></ul> |

**The context of assessment**

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

**Methods of assessment**

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

**Specific resource requirements for this unit**

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to paver screeding operations
  - hand and power tools, plant and equipment appropriate to paver screeding operations
  - specifications and work instructions

**... End ...**

## BCCBS3003B operations

### Unit Descriptor

## Conduct materials transfer vehicle

This unit specifies the competency required to operate a materials transfer vehicle for asphalt paving operations. It includes the minimum criteria for competency assessment.

This unit includes maintaining the smooth transfer of material from a tip truck to a paver via the transfer vehicle.

### Employability Skills

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

### Element

Elements define the essential outcomes of a unit of competency.

### Performance Criteria

Performance criteria specify the level of performance required to demonstrate achievement of the element.

#### 1 Plan and prepare

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allotted task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
- 1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
- 1.4 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

- |   |                                |  |
|---|--------------------------------|--|
| 2 | Transfer materials             | <ul style="list-style-type: none"><li>2.1 Communication with other plant operators and personnel is established to ensure safety of operation</li><li>2.2 Feeder bin is fitted following manufacturers' instructions</li><li>2.3 Start up, park and shut down procedures are performed in accordance with manufacturers' instructions or company procedures</li><li>2.4 Vehicle controls and functions are tested before commencing operations</li><li>2.5 Transfer vehicle is positioned to deliver asphalt to paver without spillage</li><li>2.6 Delivery truck is directed into position with the materials transfer vehicle</li><li>2.7 Asphalt is received from delivery truck into the materials transfer vehicle hoppers and monitored to ensure recommended levels</li><li>2.8 Asphalt is delivered to paver smoothly and without impact that would cause bounce in the paver</li><li>2.9 Speed is maintained as directed by paver operator during transfer operations</li></ul> |
| 3 | Carry out operator maintenance | <ul style="list-style-type: none"><li>3.1 Material transfer vehicle is safely parked, shut down and prepared for maintenance as per manufacturers' manual and/or organisational requirements</li><li>3.2 Inspection and fault finding are conducted in accordance with manufacturers' specifications and/or organisational requirements</li><li>3.3 Defective parts are removed and replaced safely and effectively according to manufacturers' manual and organisational requirements</li><li>3.4 Regular programmed maintenance tasks are carried out in accordance with manufacturers' and/or organisational requirements</li><li>3.5 Equipment is cleaned out between change over of product and/or at the end of the work period</li></ul>  |
| 4 | Clean up                       | <ul style="list-style-type: none"><li>4.1 Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan</li><li>4.2 Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices</li></ul>   |

## Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

### Unit scope

- Materials transfer vehicle (MTV) tasks are to include access to and from sites, manoeuvring of MTV on site, receive materials from trucks, load paver, stockpile and may include loading trucks
- Traffic control signage may include but not be limited to escort vehicle, highway traffic signs, site safety signage, temporary signage for the benefit of motorists and pedestrians, and traffic conditions signage
- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements
- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas
- Site locations may include but not be limited to car parks, airport runways, container yards, hard stands, footpaths, bikeways and roadways

**Safety (OH&S)**

- OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances
- Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement
- Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with high voltage power lines, uneven/unstable terrain, trees, pits, poles, dirt mounds, overhead service lines, surrounding buildings, obstructions, structures, facilities, dangerous materials, recently filled trenches, other machines, personnel, traffic control, working in proximity to others, worksite visitors and the public
- Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices
- Hazards and risks may include but not be limited to uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials
- Emergency procedures related to equipment operation are to include but may not be limited to emergency shutdown and stopping, extinguishing fires, organisational first aid requirements and evacuation

**Environmental Requirements**

- Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management

**Quality Requirements**

- Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction



<b>Statutory/Regulatory Authorities</b>	<ul style="list-style-type: none"> <li>State/Regulatory Authorities may include Federal, State and Local Authorities</li> </ul>
<b>Tools and equipment</b>	<ul style="list-style-type: none"> <li>Tools and equipment are to include but not limited to MTVs, shovels, scrapers, brooms and basic tool kits</li> </ul>
<b>Materials</b>	<ul style="list-style-type: none"> <li>Materials are to include but not limited to asphalt and may include granular paving materials and oil based cleaning products</li> </ul>
<b>Communications</b>	<ul style="list-style-type: none"> <li>Communications are to include but not limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li> </ul>
<b>Information</b>	<ul style="list-style-type: none"> <li>Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, maps, material safety data sheets (MSDS) and diagrams or sketches</li> <li>Safe work procedures or equivalent related to the materials transfer vehicle operations</li> <li>Regulatory/legislative requirements pertaining to the materials transfer vehicle operations</li> <li>Manufacturers' specifications and instructions</li> <li>Organisation work specifications and requirements.</li> <li>Instructions issued by authorised organisational or external personnel</li> <li>AAPA code of practice for use of SBS modified binders</li> <li>Relevant Australian Standards and Austroads</li> <li>AAPA advisory notes and codes of practice</li> </ul>

## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- The conduct of material transfer vehicle operations are to include accessing and exiting sites, manoeuvring of MTV on site, receive materials from trucks, load paver, stockpile and may include loading trucks
- Transfer a minimum of ten truck loads of material on three separate projects, in accordance with project specifications and/or work instructions
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

### Relationship to other units

- Pre-requisite units are:  
BCCCM1001C Follow OH&S policies and procedures  
  
Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

**Specific knowledge required to achieve the performance criteria**

- A knowledge of
  - Site and equipment safety requirements
  - Asphalt paving techniques
  - Material transfer vehicle equipment types, characteristics, technical capabilities and limitations
  - Operational, maintenance and basic diagnostic procedures
  - Site isolation and traffic control responsibilities and authorities
  - Processes for the calculation of material requirements, application rates and travel speed
  - Materials Safety Data Sheets and materials handling methods
  - Project quality requirements
  - Civil construction terminology
  - Safe operating techniques in all terrain
  - JSA's/Safe work method statements

**The context of assessment**

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

**Methods of assessment**

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

**Specific resource requirements for this unit**

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to materials transfer vehicle operations
  - hand and power tools, plant and equipment appropriate to materials transfer vehicle operations
  - specifications and work instructions

**... End ...**

## BCCBS3004B

### Unit Descriptor

## Compact asphalt with rollers

This unit specifies the competency required to operate rollers to compact asphalt in the construction and maintenance of asphalt pavement for strength and performance of a finished layer. It includes the minimum criteria for competency assessment.

This unit includes the compacting of various types of asphalt.

### Employability Skills

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

### Element

Elements define the essential outcomes of a unit of competency.

### Performance Criteria

Performance criteria specify the level of performance required to demonstrate achievement of the element.

#### 1 Plan and prepare

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allotted task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
- 1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
- 1.4 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

#### 2 Prepare roller

- 2.1 Pre-operational checks are performed as per manufacturers' or company instructions
- 2.2 Job specifications are recorded
- 2.3 Work schedule is produced
- 2.4 Water usage and replenishment is planned
- 2.5 Tyres are set to required pressure (self propelled, multi-wheeled pneumatic tyred rollers)

- |   |                                       |  |
|---|---------------------------------------|--|
| 3 | Compact asphalt                       | <ul style="list-style-type: none"><li>3.1 Site hazards associated with compacting asphalt with rollers are identified and safe operating techniques are used to minimise risk</li><li>3.2 Speed and rolling patterns are determined according to job requirements</li><li>3.3 Amplitude and frequency are set as directed for vibratory steel wheeled rollers</li><li>3.4 Damage to other structures is avoided</li><li>3.5 Watering system is monitored to prevent pick up</li><li>3.6 Uniform speed and rolling pattern is maintained to job specification</li><li>3.7 Joints are compacted to job specifications</li><li>3.8 Final surface is compacted free of blemishes or rolling marks</li><li>3.9 Safe distance is maintained between rollers, other plant and the paving crew</li></ul> |
| 4 | Carry out roller operator maintenance | <ul style="list-style-type: none"><li>4.1 Roller is safely parked and shut down and prepared for maintenance as per manufacturers' manual and/or organisational requirements</li><li>4.2 Inspection and fault finding are conducted in accordance with manufacturers' specifications and/or organisational requirements</li><li>4.3 Defective parts are removed and replaced safely and effectively in accordance with manufacturers' manual and organisational requirements</li><li>4.4 Regular programmed maintenance tasks are carried out in accordance with manufacturers' and/or organisational requirements</li></ul>   |
| 5 | Relocate roller                       | <ul style="list-style-type: none"><li>5.1 Roller is prepared for relocation</li><li>5.2 Roller is driven safely on highways and construction sites, observing highway code and local safety requirements</li></ul>   |
| 6 | Clean up                              | <ul style="list-style-type: none"><li>6.1 Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan</li><li>6.2 Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices</li></ul>   |

## Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

### Unit scope

- Types of rollers are to include but not be limited to steel double drum static roller, double drum vibratory roller, self propelled multi wheel pneumatic tyred roller and may include a combination roller
- Operation of the roller is to include filling the roller with water
- Avoidance of other structures is to include but not be limited to kerb and channel, buildings and other structures
- Changing conditions are to include but not be limited to surface material, size and geometry of area to be compacted, proximity to public traffic, dust sensitive situations, size of aggregate, type and size of asphalt, asphalt temperatures and weather conditions
- Traffic control signage may include but not be limited to escort vehicle, highway traffic signs, site safety signage, temporary signage for the benefit of motorists and pedestrians, and traffic conditions signage
- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements
- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas
- Site locations may include but not be limited to car parks, airport runways, container yards, hard stands, footpaths, bikeways and roadways

**Safety (OH&S)**

- OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances
- Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement
- Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with uneven/unstable terrain, trees, pits, poles, dirt mounds, overhead service lines, bridges, surrounding buildings, obstructions, structures, facilities, dangerous materials, recently filled trenches, other machines, personnel, traffic control, working in proximity to others, worksite visitors and the public
- Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices
- Hazards and risks may include but not be limited to uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials
- Emergency procedures related to equipment operation are to include but may not be limited to emergency shutdown and stopping, extinguishing equipment fires, organisational first aid requirements and evacuation

**Environmental Requirements**

- Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management

**Quality Requirements**

- Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction



<b>Statutory/Regulatory Authorities</b>	<ul style="list-style-type: none"> <li>State/Regulatory Authorities may include Federal, State and Local Authorities</li> </ul>
<b>Tools and equipment</b>	<ul style="list-style-type: none"> <li>Tools and equipment are to include but not limited to rollers, roller mats, spare water jets and water transfer equipment and may include shovels, brooms, rakes and a basic tool kit</li> </ul>
<b>Materials</b>	<ul style="list-style-type: none"> <li>Materials are to include but not limited to water and may include wetting agents</li> </ul>
<b>Communications</b>	<ul style="list-style-type: none"> <li>Communications are to include but not limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li> </ul>
<b>Information</b>	<ul style="list-style-type: none"> <li>Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, maps, material safety data sheets (MSDS) and diagrams or sketches</li> <li>Safe work procedures or equivalent related to the compacting of asphalt with rollers</li> <li>Regulatory/legislative requirements pertaining to the compacting of asphalt with rollers</li> <li>Manufacturers' specifications and instructions</li> <li>Organisation work specifications and requirements.</li> <li>Instructions issued by authorised organisational or external personnel</li> <li>Relevant Australian Standards and Austroads</li> <li>AAPA advisory notes and codes of practice</li> </ul>

## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- A minimum of 2000m<sup>2</sup> of asphalt is to be compacted to the determined pattern, the measured density, with the minimum number of passes specified and to job specifications for five projects, with at least one project under 50mm thick and one project over 50mm thick
- A minimum of three longitudinal joints of 100 metres each and two transfer joints to be matched
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

### Relationship to other units

- Pre-requisite units are:  
BCCCM1001C Follow OH&S policies and procedures  
  
Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

**Specific knowledge required to achieve the performance criteria**

- A knowledge of
  - Site and equipment safety requirements
  - Asphalt compacting techniques
  - Asphalt paving operations
  - Asphalt strength and performance characteristics
  - Edge and joint treatments
  - Equipment types, characteristics, technical capabilities and limitations
  - Operational, maintenance and basic diagnostic procedures
  - Site isolation and traffic control responsibilities and authorities
  - Processes for the calculation of material uniformity and travel speed
  - Materials Safety Data Sheets and materials handling methods
  - Project quality requirements
  - Civil construction terminology
  - Safe operating techniques in all terrain
  - JSA's/Safe work method statements

**The context of assessment**

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

**Methods of assessment**

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

**Specific resource requirements for this unit**

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to compacting asphalt with rollers
  - hand and power tools, plant and equipment appropriate to compacting asphalt with rollers
  - specifications and work instructions

**... End ...**

## BCCBS3005B

### Unit Descriptor

## Conduct asphalt paver operations

This unit specifies the competency required to operate an asphalt paver for placing of asphalt layers in road surfacing operations. It includes the minimum criteria for competency assessment.

This unit includes placing of asphalt to the required line and uniformity.

### Employability Skills

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

### Element

Elements define the essential outcomes of a unit of competency.

### Performance Criteria

Performance criteria specify the level of performance required to demonstrate achievement of the element.

#### 1 Plan and prepare

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allotted task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
- 1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
- 1.4 Material to be laid and handling procedures to be employed are determined according to specifications
- 1.5 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.6 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

- |   |                                |  |
|---|--------------------------------|--|
| 2 | Set up asphalt paver           | 2.1 Start up, park, shut down procedures are carried out in accordance with manufacturers' and/or site specific requirements                       |
|   |                                | 2.2 Tyres are adjusted/changed/inflated using safe handling procedures in accordance with operator's manual and site conditions                    |
|   |                                | 2.3 Equipment is set to correct levels to enable the laying of materials to specifications   |
|   |                                | 2.4 Heating controls for the screed board are set to specifications  |
|   |                                | 2.5 Feeder bin is installed where required   |
|   |                                | 2.6 Materials spreading controls are checked for correct operation   |
| 3 | Operate asphalt paver          | 3.1 Delivery vehicles are engaged smoothly without bumping   |
|   |                                | 3.2 Appropriate uniform speed is maintained during spreading operations  |
|   |                                | 3.3 Asphalt mix is monitored and maintained according to job specifications  |
|   |                                | 3.4 Communication is maintained with screed hand to ensure job is progressing satisfactorily and that materials are being spread to specifications |
|   |                                | 3.5 Movement of the plant is monitored to ensure safety of asphalt crew  |
| 4 | Carry out operator maintenance | 4.1 Paver is safely parked, prepared for maintenance and shut down as per manufacturers' manual and organisational requirements                    |
|   |                                | 4.2 Inspection and fault finding are conducted in accordance with manufacturers' specifications and/or organisational requirements                 |
|   |                                | 4.3 Routine operational servicing and lubrication tasks are carried out to manufacturers' and/or organisational requirements                       |
|   |                                | 4.4 Minor maintenance is carried out to manufacturers' and/or organisational requirements  |
|   |                                | 4.5 Performance of machine is constantly recorded to enable timely repair of equipment   |

- |   |                |  |
|---|----------------|--|
| 5 | Relocate paver | 5.1 Paver is prepared for relocation   |
|   |                | 5.2 Paver is driven safely on highways and construction sites, observing highway code and local safety requirements                                      |
| 6 | Clean up       | 6.1 Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan                                  |
|   |                | 6.2 Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices |

## Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

### Unit scope

- Operation of the asphalt paver is to include but not be limited to asphalt and may include granular materials and bound materials
- Asphalt paver tasks are to include but not be limited to spreading bituminous materials and mixing materials and may include spreading concrete and spreading granular materials
- Material delivery through the paver is to include manual and automatic control
- Traffic control signage may include but not be limited to escort vehicle, highway traffic signs, site safety signage, temporary signage for the benefit of motorists and pedestrians, and traffic conditions signage
- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements
- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas
- Site locations may include but not be limited to car parks, airport runways, container yards, hard stands, footpaths, bikeways and roadways

**Safety (OH&S)**

- OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances
- Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement
- Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with uneven/unstable terrain, dirt mounds, overhead service lines, bridges, surrounding buildings, obstructions, structures, facilities, dangerous materials, recently filled trenches, other machines, personnel, traffic control, working in proximity to others, worksite visitors and the public
- Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices
- Hazards and risks may include but not be limited to uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials
- Emergency procedures related to equipment operation are to include but may not be limited to emergency shutdown and stopping, extinguishing equipment fires, organisational first aid requirements and evacuation

**Environmental Requirements**

- Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management

**Quality Requirements**

- Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction



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<b>Statutory/Regulatory Authorities</b>	<ul style="list-style-type: none"><li>• State/Regulatory Authorities may include Federal, State and Local Authorities</li></ul>
<b>Tools and equipment</b>	<ul style="list-style-type: none"><li>• Tools and equipment are to include but not limited to pavers and basic tool kits and may include shovels</li></ul>
<b>Materials</b>	<ul style="list-style-type: none"><li>• Materials are to include but not limited to asphalt and may include granular materials and bound materials</li></ul>
<b>Communications</b>	<ul style="list-style-type: none"><li>• Communications are to include but not limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li></ul>
<b>Information</b>	<ul style="list-style-type: none"><li>• Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, maps, material safety data sheets (MSDS) and diagrams or sketches</li><li>• Safe work procedures or equivalent related to asphalt paver operations</li><li>• Regulatory/legislative requirements pertaining to asphalt paver operations</li><li>• Manufacturers' specifications and instructions</li><li>• Organisation work specifications and requirements.</li><li>• Instructions issued by authorised organisational or external personnel</li><li>• Relevant Australian Standards and Austroads</li><li>• AAPA advisory notes and codes of practice</li></ul>

## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### **Critical aspects of evidence required to demonstrate competency in this unit**

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- The conduct of paver operations are to be performed in a minimum of two different asphalt types/surface types and are to include the mandatory tasks from the unit scope and cover as a minimum:
  - three longitudinal joints (of at least 100m) to be constructed to required thickness, uniformity, line and level, on both matching and unsupported edge in accordance with project specifications and/or work instructions;
  - six transverse joints to be constructed to required thickness, uniformity, line and level, on both matching and unsupported edge in accordance with project specifications and/or work instructions;
  - five sections of straight paving (one of at least 100 linear metres) to required thickness, uniformity, line and level, on both matching and unsupported edge in accordance with project specifications and/or work instructions;
  - three intersections to required thickness, uniformity, line and level, on both matching and unsupported edge in accordance with project specifications and/or work instructions
  - operations to include residential, commercial and highway projects; and
  - material delivery through the paver is to include manual and automatic control
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

<b>Relationship to other units</b>	<ul style="list-style-type: none"> <li>• Pre-requisite units are:  BCCCM1001C Follow OH&amp;S policies and procedures  Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role</li> </ul>
<b>Specific knowledge required to achieve the performance criteria</b>	<ul style="list-style-type: none"> <li>• A knowledge of           <ul style="list-style-type: none"> <li>- Site and equipment safety requirements</li> <li>- Asphalt paving techniques</li> <li>- Asphalt paving operations</li> <li>- Asphalt strength and performance characteristics</li> <li>- Edge and joint treatments</li> <li>- Equipment types, characteristics, technical capabilities and limitations</li> <li>- Operational, maintenance and basic diagnostic procedures</li> <li>- Site isolation and traffic control responsibilities and authorities</li> <li>- Processes for the calculation of material requirements, mix, application rates, uniformity and travel speed</li> <li>- Materials Safety Data Sheets and materials handling methods</li> <li>- Project quality requirements</li> <li>- Civil construction terminology</li> <li>- JSA's/Safe work method statements</li> </ul> </li> </ul>
<b>The context of assessment</b>	<ul style="list-style-type: none"> <li>• The application of competency is to be assessed in the workplace or realistically simulated workplace</li> <li>• Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints</li> <li>• Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context</li> <li>• Assessment is to comply with relevant regulatory or Australian Standards requirements</li> </ul>
<b>Methods of assessment</b>	<ul style="list-style-type: none"> <li>• Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package</li> <li>• Assessment methods must confirm consistency and</li> </ul>

accuracy of performance together with application of underpinning knowledge

- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above
- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to asphalt paving
  - hand and power tools, plant and equipment appropriate to asphalt paving
  - specifications and work instructions

**... End ...**

**Specific resource  
requirements for this unit**

## BCCBS3006B

### Unit Descriptor

## Conduct slurry sealing operations

This unit specifies the competency required to operate a slurry sealing machine for the application of bituminous slurry seal in the construction and maintenance of pavements. It includes the minimum criteria for competency assessment.

This unit includes the loading, mixing and placing of the bituminous slurry seal.

### Employability Skills

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

### Element

Elements define the essential outcomes of a unit of competency.

### Performance Criteria

Performance criteria specify the level of performance required to demonstrate achievement of the element.

#### 1 Plan and prepare

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allotted task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
- 1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
- 1.4 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

#### 2 Prepare mix materials

- 2.1 Material availability for slurry seal operations is confirmed
- 2.2 Mix specifications are ascertained and confirmed
- 2.3 Paving unit is checked to ensure correct calibration of metering devices to mix specification
- 2.4 Spreader box is cleaned and tested for correct operation

- |   |  |  |
|---|--|--|
| 3 | Prepare surface for slurry application | 3.1 Services are protected in accordance with company or client instructions   |
|   |  | 3.2 Surface defects are noted and rectified or treated during sealing operation  |
|   |  | 3.3 Work area is cleaned and cleared of loose stones, oil or other contaminants  |
|   |  | 3.4 Work area is set out ensuring a straight edge is maintained along kerbs, shoulders and through intersections   |
| 4 | Apply slurry seal                      | 4.1 Consistency of mix is maintained as per specification or job instructions  |
|   |  | 4.2 Spread is mixed in accordance with specification or job instructions   |
|   |  | 4.3 Surface finish is achieved in accordance with specification or job instruction   |
|   |  | 4.4 Joints are to be neat with no overlapping or excess materials showing  |
|   |  | 4.5 Hand spreading is used to cover small or difficult areas   |
| 5 | Carry out operator maintenance         | 5.1 Inspection and fault finding are conducted in accordance with manufacturers' specifications and/or organisational requirements                       |
|   |  | 5.2 Routine operational servicing and lubrication tasks are carried out to manufacturers' and/or organisational requirements                             |
|   |  | 5.3 Minor maintenance is carried out to manufacturers' and/or organisational requirements  |
|   |  | 5.4 Performance of machine is constantly recorded to enable timely repair of equipment   |
| 6 | Clean up                               | 6.1 Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan                                  |
|   |  | 6.2 Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices |

## Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

### Unit scope

- Slurry sealing operations are to include but not be limited to use of raw materials, mixing and producing the mix to specification
- Slurry operations may include but not be limited to correction work, overlay work, rut filling and cape seals
- Preparation for slurry sealing may include but not be limited to a tack coat being first applied
- Traffic control signage may include but not be limited to escort vehicle, highway traffic signs, site safety signage, temporary signage for the benefit of motorists and pedestrians, and traffic conditions signage
- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements
- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas
- Site locations may include but not be limited to car parks, airport runways, container yards, hard stands, footpaths, bikeways and roadways

**Safety (OH&S)**

- OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances
- Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement
- Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with uneven/unstable terrain, poles, dirt mounds, overhead service lines, underground services (drains, pipes, power, communication lines), bridges, surrounding buildings, obstructions, structures, facilities, dangerous materials, recently filled trenches, other machines, personnel, traffic control, working in proximity to others, worksite visitors and the public
- Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices
- Hazards and risks may include but not be limited to uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials
- Emergency procedures related to equipment operation are to include but may not be limited to emergency shutdown and stopping, extinguishing equipment fires, organisational first aid requirements and evacuation

**Environmental Requirements**

- Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management



<b>Quality Requirements</b>	<ul style="list-style-type: none"> <li>Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction</li> </ul>
<b>Statutory/Regulatory Authorities</b>	<ul style="list-style-type: none"> <li>State/Regulatory Authorities may include Federal, State and Local Authorities</li> </ul>
<b>Tools and equipment</b>	<ul style="list-style-type: none"> <li>Tools and equipment are to include but not limited to slurry sealing machines, basic tool kits, slurry boxes, squeegees, shovels and brooms and may include hessian/canvas drags</li> </ul>
<b>Materials</b>	<ul style="list-style-type: none"> <li>Materials are to include but not limited to bitumen emulsion, aggregates (course, fine), cement, additives and water</li> </ul>
<b>Communications</b>	<ul style="list-style-type: none"> <li>Communications are to include but not limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li> </ul>
<b>Information</b>	<ul style="list-style-type: none"> <li>Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, maps, material safety data sheets (MSDS) and diagrams or sketches</li> <li>Safe work procedures or equivalent related to the slurry sealing operations</li> <li>Regulatory/legislative requirements pertaining to the slurry sealing operations</li> <li>Manufacturers' specifications and instructions</li> <li>Organisation work specifications and requirements.</li> <li>Instructions issued by authorised organisational or external personnel</li> <li>Relevant Australian Standards and Austroads</li> <li>AAPA advisory notes and codes of practice</li> </ul>

## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- A minimum of 300 metres of slurry seal is to be placed including preparing of the mixture to job specification for five projects and must include two rut filling only projects
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

### Relationship to other units

- Pre-requisite units are:  
BCCCM1001C Follow OH&S policies and procedures  
  
Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

**Specific knowledge required to achieve the performance criteria**

- A knowledge of
  - Site and equipment safety requirements
  - Slurry sealing techniques
  - Paving operations
  - Different types of slurry, mixes and their characteristics
  - Equipment types, characteristics, technical capabilities and limitations
  - Operational, maintenance and basic diagnostic procedures
  - Site isolation and traffic control responsibilities and authorities
  - Processes for the calculation of material requirements, mix, application rates and travel speed
  - Materials Safety Data Sheets and materials handling methods
  - Project quality requirements
  - Civil construction terminology
  - JSA's/Safe work method statements

**The context of assessment**

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

**Methods of assessment**

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

**Specific resource requirements for this unit**

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to slurry sealing operations
  - hand and power tools, plant and equipment appropriate to slurry sealing operations
  - specifications and work instructions

**... End ...**

**BCCBS3007B****Unit Descriptor****Conduct bitumen sprayer operations**

This unit specifies the competency required to operate a bitumen sprayer to apply bituminous materials as part of bituminous surfacing operations. It includes the minimum criteria for competency assessment.

This unit includes spraying a variety of bituminous materials from a purpose built vehicle or by hand at a range of application rates.

**Employability Skills**

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

**Element**

Elements define the essential outcomes of a unit of competency.

**Performance Criteria**

Performance criteria specify the level of performance required to demonstrate achievement of the element.

**1 Plan and prepare**

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allotted task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
- 1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
- 1.4 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

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|---|----------------|-----|--|
| 2 | Set up sprayer | 2.1 | Pre-operational checks are carried out in accordance with organisation, manufacturer or site authorised procedures |
|   |                | 2.2 | Ancillary tanks are full and adequate materials are determined to perform spray operations                         |
|   |                | 2.3 | Tank checked for prevention of contamination   |
|   |                | 2.4 | Spraying details are obtained and translated   |
|   |                | 2.5 | Spraying speed and pump rpm are calculated   |
|   |                | 2.6 | Correct amount of cutter is introduced   |
|   |                | 2.7 | Appropriate number and size of jets are fitted to the spray bar  |

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|---|-------------------------|--|
| 3 | Load sprayer            | 3.1 Previous load details are checked for compatibility  |
|   |                         | 3.2 Tank is loaded with the prescribed type and quantity of material   |
|   |                         | 3.3 Additives are added and mixed where required   |
|   |                         | 3.4 Temperature of the material is checked to comply with manufacturers' specifications and heated   |
|   |                         | 3.5 Material quantities and additives are measured, calculated and recorded  |
| 4 | Operate bitumen sprayer | 4.1 Start up, park, shut down procedures are carried out in accordance with manufacturers and site requirements                                |
|   |                         | 4.2 Spraying techniques are selected and modified to appropriately meet changing work conditions   |
|   |                         | 4.3 Work is planned to maximise machine coverage and minimise hand spraying  |
|   |                         | 4.4 Control valves are set correctly for the type of operation   |
|   |                         | 4.5 Spraying operations are conducted, controlled and monitored to ensure materials are sprayed to specification                               |
|   |                         | 4.6 Operations adjacent to traffic are carried out in accordance with authorised traffic management controls and in a safe manner at all times |
|   |                         | 4.7 Spraying is completed without damage to property or vehicles   |
| 5 | Operate hand lance      | 5.1 Hand lance is inspected to ensure correct operation  |
|   |                         | 5.2 Hand spraying techniques are selected to match work conditions   |
|   |                         | 5.3 Hand spraying operations are conducted, controlled and monitored to ensure compliance with specification                                   |
|   |                         | 5.4 Hand spraying operations adjacent to traffic are carried out in accordance with authorised traffic management plans                        |
| 6 | Unload/empty sprayer    | 6.1 Tank is unloaded/emptied into storage or waste   |
|   |                         | 6.2 Tank interior and spray bar are cleaned in accordance with Austroads Bitumen Sealing Safety Guide  |

- |   |                                |     |  |
|---|--------------------------------|-----|--|
| 7 | Carry out operator maintenance | 7.1 | Fault finding inspections are conducted in accordance with manufacturers' specifications and organisational requirements                             |
|   |                                | 7.2 | Spray bars and nozzles are maintained in good working order  |
|   |                                | 7.3 | Routine operational servicing and lubrication tasks are carried out to manufacturers' and organisational requirements                                |
|   |                                | 7.4 | Equipment condition reports and records are maintained in accordance with organisational requirements  |
| 8 | Clean up                       | 8.1 | Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan                                  |
|   |                                | 8.2 | Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices |

## Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

### Unit scope

- Bitumen sprayers are vehicles which are purpose built, self contained units fitted with pumping and heating equipment that can load, mix heat and spray bituminous materials onto a pavement at a specified rate. They also provide facilities for hand spraying
- Bitumen spraying is restricted to include mechanical bitumen sprayers only
- Bitumen spraying procedures are to include but not be limited to nominated rates of application, uniformity, loading, unloading, transferring, heating, spraying and hand lancing
- Maintaining of records is to include but not be limited to necessary calculations for quantities and rates of application achieved
- Surfaces are to include but not be limited to granular materials, spray seal, asphalt and concrete



**Unit scope (continued)**

- Hand lancing is to include but not be limited to vehicle being positioned so that hoses are not ran over or entangled, correct pump pressure is used, area is sprayed to specification, and a lookout is used to watch hoses and for other workers/public
- Safe heating procedures of bituminous products is to be conducted in accordance with manufacturers' manuals, organisational policy and safe work procedures
- Traffic control signage may include but not be limited to escort vehicle, highway traffic signs, site safety signage, temporary signage for the benefit of motorists and pedestrians, and traffic conditions signage
- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements
- Weather conditions may include visibility day or night, prevailing winds and dust
- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas
- Site locations may include but not be limited to car parks, airport runways, container yards, hard stands, footpaths, bikeways and roadways

**Safety (OH&S)**

- OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances
- Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement
- Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with uneven/unstable terrain, poles, dirt mounds, overhead service lines, bridges, surrounding buildings, obstructions, structures, facilities, dangerous materials, recently filled trenches, other machines, personnel, traffic control, working in proximity to others, worksite visitors and the public
- Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices
- Hazards and risks may include but not be limited to uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials
- Emergency procedures related to equipment operation are to include but may not be limited to emergency shutdown and stopping, extinguishing equipment fires, organisational first aid requirements and evacuation

**Environmental Requirements**

- Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management

<b>Quality Requirements</b>	<ul style="list-style-type: none"> <li>Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction</li> </ul>
<b>Statutory/Regulatory Authorities</b>	<ul style="list-style-type: none"> <li>State/Regulatory Authorities may include Federal, State and Local Authorities</li> </ul>
<b>Tools and equipment</b>	<ul style="list-style-type: none"> <li>Tools and equipment are to include but not limited to bitumen sprayers, hand lances, hoses, rags, transfer hoses, jets, basic tool kits, bitumen spray charts and may include end shields, gas bottles and lighters</li> </ul>
<b>Materials</b>	<ul style="list-style-type: none"> <li>Materials are to include but not limited to bitumen, cutback bitumen and polymer modified binders and may include multi-grade bitumen, bitumen emulsions, kerosene, distillate and adhesion agents</li> </ul>
<b>Communications</b>	<ul style="list-style-type: none"> <li>Communications are to include but not limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li> </ul>
<b>Information</b>	<ul style="list-style-type: none"> <li>Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, maps, material safety data sheets (MSDS) and diagrams or sketches</li> <li>Safe work procedures or equivalent related to the bitumen sprayer operations</li> <li>Regulatory/legislative requirements pertaining to the bitumen sprayer operations</li> <li>Manufacturers' specifications and instructions</li> <li>Organisation work specifications and requirements.</li> <li>Instructions issued by authorised organisational or external personnel</li> <li>Relevant Australian Standards and Austroads</li> <li>AAPA advisory notes and codes of practice</li> </ul>

## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- A minimum of three different materials to be loaded, mixed, heated and sprayed for two sprayer loads each to be used for two straight runs, two tapers or turning slots and two restricted areas to specified tolerances (spray runs to be a minimum total of 60% of the tank)
- A minimum of two areas to be hand lanced, each with a different material and to the specified tolerance
- Completion of all calculations and spray sheets for the activities in the two previous dot points
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

### Relationship to other units

- Pre-requisite units are:  
BCCCM1001C Follow OH&S policies and procedures  
  
Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

**Specific knowledge required to achieve the performance criteria**

- A knowledge of
  - Site and equipment safety requirements
  - Bitumen spraying procedures
  - Bituminous materials and their characteristics
  - Processes for heating bitumen
  - Equipment types, characteristics, technical capabilities and limitations
  - Operational, maintenance and basic diagnostic procedures
  - Site isolation and traffic control responsibilities and authorities
  - Processes for the calculation of material requirements, application rates and travel speed
  - Materials Safety Data Sheets and materials handling methods
  - Project quality requirements
  - Civil construction terminology
  - Safe operating techniques in all terrain
  - JSA's/Safe work method statements

**The context of assessment**

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

**Methods of assessment**

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

**Specific resource requirements for this unit**

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to bitumen spraying operations
  - hand and power tools, plant and equipment appropriate to bitumen spraying operations
  - specifications and work instructions

**... End ...**

## BCCBS3008B loader

## Load aggregate using a purpose built

### Unit Descriptor

This unit specifies the competency required to operate a purpose built loader in the application of sprayed sealing operations. It includes the minimum criteria for competency assessment.

This unit includes the loading, screening and pre-coating of sealing aggregate in one operation from stock pile into a truck.

### Employability Skills

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

### Element

Elements define the essential outcomes of a unit of competency.

### Performance Criteria

Performance criteria specify the level of performance required to demonstrate achievement of the element.

#### 1 Plan and prepare

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allotted task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
- 1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
- 1.4 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

- 
- |   |                                |  |
|---|--------------------------------|--|
| 2 | Prepare loader for operation   | 2.1 Pre-operational checks are conducted in accordance with manufacturers' handbook or company instructions  |
|   |                                | 2.2 Type and quantity of pre-coat in tank is checked and adjusted to required level  |
|   |                                | 2.3 Loader vehicle is checked for functionality  |
|   |                                | 2.4 Pre-coating requirements are checked and correct loader size selected  |
|   |                                | 2.5 Material quantities and screen sizes are recorded  |
|   |                                | 2.6 Screens are selected appropriate to the aggregate size   |
| 3 | Manage stack site              | 3.1 Aggregate sizes are identified and recorded  |
|   |                                | 3.2 Ground conditions are checked at stack site to minimise contamination  |
|   |                                | 3.3 Quantities in aggregate stockpiles are estimated and recorded  |
|   |                                | 3.4 Suitable parking availability is identified and reserved for trucks while waiting and loading  |
|   |                                | 3.5 Truck entry/exit signs are positioned as required  |
|   |                                | 3.6 Stack site is kept free from contamination by pre-coat material  |
| 4 | Load/screen/pre-coat aggregate | 4.1 Trucks are directed into position to minimise dust to workers and contamination of aggregates in windy conditions                                    |
|   |                                | 4.2 Appropriate aggregate quantities are loaded into trucks without contamination  |
|   |                                | 4.3 Pre-coating is applied uniformly to aggregate at specified rate  |
|   |                                | 4.4 Aggregate quantities are loaded accurately and recorded to company requirements  |
| 5 | Clean up                       | 5.1 Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan                                  |
|   |                                | 5.2 Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices |



## Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

### Unit scope

- Types of loaders are to include but not be limited to truck mounted loader that can load, screen and pre-coat aggregate in one operation, or trailer mounted that can screen and pre-coat in one operation (usually fed by a front end loader)
- Loading and screening of aggregate may include but not be limited to re-screening of stockpile aggregate. Stockpiled pre-coated aggregate may not require recoating
- Traffic control signage may include but not be limited to escort vehicle, highway traffic signs, site safety signage, temporary signage for the benefit of motorists and pedestrians, and traffic conditions signage
- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements
- Weather conditions may include visibility day or night, prevailing winds and dust
- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas
- Site locations may include but not be limited to car parks, airport runways, container yards, hard stands, footpaths, bikeways and roadways

**Safety (OH&S)**

- OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances
- Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement
- Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with uneven/unstable terrain, poles, dirt mounds, overhead service lines, bridges, surrounding buildings, obstructions, structures, facilities, dangerous materials, recently filled trenches, other machines, personnel, traffic control, working in proximity to others, worksite visitors and the public
- Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices
- Hazards and risks may include but not be limited to uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials
- Emergency procedures related to equipment operation are to include but may not be limited to emergency shutdown and stopping, extinguishing equipment fires, organisational first aid requirements and evacuation

**Environmental Requirements**

- Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management

**Quality Requirements**

- Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction

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<b>Statutory/Regulatory Authorities</b>	<ul style="list-style-type: none"><li>• State/Regulatory Authorities may include Federal, State and Local Authorities</li></ul>
<b>Tools and equipment</b>	<ul style="list-style-type: none"><li>• Tools and equipment are to include but not limited to purpose built aggregate loaders, screens and tool kits</li></ul>
<b>Materials</b>	<ul style="list-style-type: none"><li>• Materials are to include but not limited to sealing aggregates, pre-coated aggregates and pre-coating materials</li></ul>
<b>Communications</b>	<ul style="list-style-type: none"><li>• Communications are to include but not limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li></ul>
<b>Information</b>	<ul style="list-style-type: none"><li>• Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, maps, material safety data sheets (MSDS) and diagrams or sketches</li><li>• Safe work procedures or equivalent related to the loading of aggregate using purpose build loader</li><li>• Regulatory/legislative requirements pertaining to the loading of aggregate using purpose build loader</li><li>• Manufacturers' specifications and instructions</li><li>• Organisation work specifications and requirements.</li><li>• Instructions issued by authorised organisational or external personnel</li><li>• Relevant Australian Standards and Austroads</li><li>• AAPA advisory notes and codes of practice</li></ul>

## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### **Critical aspects of evidence required to demonstrate competency in this unit**

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- A minimum of four truck loads of aggregate from two separate stock piles are to be loaded, screened and pre-coated to job specifications
- A minimum of four truck loads of aggregate from two separate stock piles are to be loaded and screened to job specifications
- Site is cleaned in accordance with operational requirements
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

- 
- |  |  |
|--|--|
| <b>Relationship to other units</b>                                     | <ul style="list-style-type: none"><li>• Pre-requisite units are:<br/><br/>BCCCM1001C Follow OH&amp;S policies and procedures<br/><br/>Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role</li></ul>  |
| <b>Specific knowledge required to achieve the performance criteria</b> | <ul style="list-style-type: none"><li>• A knowledge of<ul style="list-style-type: none"><li>- Site and equipment safety requirements</li><li>- Aggregate types, characteristics and uses</li><li>- Aggregate loading procedures</li><li>- Aggregate screening and pre-coating procedures</li><li>- Stock pile control</li><li>- Dust control</li><li>- Silica, its properties and dangers</li><li>- Equipment types, characteristics, technical capabilities and limitations</li><li>- Operational, maintenance and basic diagnostic procedures</li><li>- Site isolation and traffic control responsibilities and authorities</li><li>- Processes for the calculation of material quantities</li><li>- Materials Safety Data Sheets and materials handling methods</li><li>- Project quality requirements</li><li>- Civil construction terminology</li><li>- JSA's/Safe work method statements</li></ul></li></ul> |

**The context of assessment**

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

**Methods of assessment**

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

**Specific resource requirements for this unit**

- The following resources should be made available:
    - workplace location or simulated workplace
    - materials relevant to aggregate loading operations
    - hand and power tools, plant and equipment appropriate to aggregate loading operations
    - specifications and work instructions
- ... End ...**





## **BCCBS3009B      Conduct self propelled aggregate spreader operations**

### **Unit Descriptor**

This unit specifies the competency required to operate a self propelled aggregate spreader for the spreading of aggregate during sprayed sealing operations. It includes the minimum criteria for competency assessment.

This unit includes truck based and hand applied aggregate spreading.

### **Employability Skills**

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

### **Element**

Elements define the essential outcomes of a unit of competency.

#### **1      Plan and prepare**

### **Performance Criteria**

Performance criteria specify the level of performance required to demonstrate achievement of the element.

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allotted task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
- 1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
- 1.4 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

- |   |  |  |
|---|--|--|
| 2 | Operate aggregate spreader                 | 2.1 Start up, park up, shut down procedures are carried out in accordance with manufacturers’/site requirements  |
|   |  | 2.2 Safe operating procedures including operating controls, monitoring gauges and systems conducting safety checks are carried out within manufacturers’/site requirements |
|   |  | 2.3 Aggregate stone size is recorded and equipment set accordingly   |
|   |  | 2.4 Truck is guided to spreader and engaged securely prior to taking on load   |
|   |  | 2.5 Calibration is checked and the machine adjusted as required  |
|   |  | 2.6 Spreading technique is selected and modified to meet changing work conditions  |
|   |  | 2.7 Spreader speed is monitored to ensure aggregate is spread at specified rate  |
| 3 | Perform hand spreading and spotting duties | 3.1 Uniformity of run is checked and corrected as required   |
|   |  | 3.2 Correct hand spreading method is used to specifications  |
| 4 | Carry out operator maintenance             | 4.1 Inspection and fault finding is conducted in accordance with manufacturers’ specifications and/or organisational requirements  |
|   |  | 4.2 Routine operational servicing and lubrication tasks are carried out to manufacturers’ and/or organisational requirements   |
|   |  | 4.3 Minor maintenance is carried out to manufacturers’ and/or organisational requirements  |
|   |  | 4.4 Equipment condition reports and records are maintained in accordance with organisational requirements  |
| 5 | Relocate aggregate spreader                | 5.1 Aggregate spreader is prepared for relocation  |
|   |  | 5.2 Aggregate spreader is driven safely on highways and construction sites, observing highway code and local safety requirements   |
| 6 | Clean up                                   | 6.1 Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan  |
|   |  | 6.2 Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers’ recommendations and standard work practices                   |

## Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

- Unit scope
  - Aggregate is applied to sprayed binder which has been distributed to surfaces that are to include but not be limited to granular materials, sprayed sealing, asphalt and may include concrete
  - Changing conditions may include but not be limited to surface materials, size and geometry of area to be spread, proximity to traffic and public, dust sensitive situations, aggregate seal size and weather conditions
  - Traffic control signage may include but not be limited to escort vehicle, highway traffic signs, site safety signage, temporary signage for the benefit of motorists and pedestrians, and traffic conditions signage
  - Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements
  - Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas
  - Site locations may include but not be limited to car parks, airport runways, container yards, hard stands, footpaths, bikeways and roadways

**Safety (OH&S)**

- OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances
- Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement
- Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with uneven/unstable terrain, poles, dirt mounds, overhead service lines, bridges, surrounding buildings, obstructions, structures, facilities, dangerous materials, recently filled trenches, other machines, personnel, traffic control, working in proximity to others, worksite visitors and the public
- Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices
- Hazards and risks may include but not be limited to uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials
- Emergency procedures related to equipment operation are to include but may not be limited to emergency shutdown and stopping, extinguishing equipment fires, organisational first aid requirements and evacuation

**Environmental Requirements**

- Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management

**Quality Requirements**

- Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction

<b>Statutory/Regulatory Authorities</b>	<ul style="list-style-type: none"><li>• State/Regulatory Authorities may include Federal, State and Local Authorities</li></ul>
<b>Tools and equipment</b>	<ul style="list-style-type: none"><li>• Tools and equipment are to include but not limited to self propelled aggregate spreaders and shovels and may include calibration equipment</li></ul>
<b>Materials</b>	<ul style="list-style-type: none"><li>• Materials are to include but not limited to sealing aggregates and pre-coated aggregates</li></ul>
<b>Communications</b>	<ul style="list-style-type: none"><li>• Communications are to include but not limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li></ul>
<b>Information</b>	<ul style="list-style-type: none"><li>• Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, maps, material safety data sheets (MSDS) and diagrams or sketches</li><li>• Safe work procedures or equivalent related to the self propelled aggregate spreading operations</li><li>• Regulatory/legislative requirements pertaining to the self propelled aggregate spreading operations</li><li>• Manufacturers' specifications and instructions</li><li>• Organisation work specifications and requirements.</li><li>• Instructions issued by authorised organisational or external personnel</li><li>• Relevant Australian Standards and Austroads</li><li>• AAPA advisory notes and codes of practice</li></ul>

## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- A minimum of six truck loads of at least two different aggregates are to be spread to the design application rate, including three runs of wings, tapers and turning lanes on at least three sites of varying complexity
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

### Relationship to other units

- Pre-requisite units are:  
BCCCM1001C Follow OH&S policies and procedures  
  
Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

**Specific knowledge required to achieve the performance criteria**

- A knowledge of
  - Site and equipment safety requirements
  - Aggregates
  - Aggregate spreading procedures
  - Sprayed sealing operations
  - Equipment types, characteristics, technical capabilities and limitations
  - Operational, maintenance and basic diagnostic procedures
  - Site isolation and traffic control responsibilities and authorities
  - Processes for the calculation of material requirements, application rates and travel speed
  - Materials Safety Data Sheets and materials handling methods
    - a. Project quality requirements
    - b. Civil construction terminology
    - c. Safe operating techniques in all terrain
    - d. JSA's/Safe work method statements

**The context of assessment**

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

**Methods of assessment**

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

**Specific resource requirements for this unit**

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to aggregate spreading operations
  - hand and power tools, plant and equipment appropriate to aggregate spreading operations
  - specifications and work instructions

**... End ...**



## BCCBS3010B

### Unit Descriptor

## Conduct patching operations

This unit specifies the competency required to operate a patching truck and its associated equipment to apply bituminous materials in patch form for the repair of existing pavement surfaces. It includes the minimum criteria for competency assessment.

This unit includes positioning the truck, operating the mixing process and filing the pothole or defect.

### Employability Skills

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

### Element

Elements define the essential outcomes of a unit of competency.

### Performance Criteria

Performance criteria specify the level of performance required to demonstrate achievement of the element.

#### 1 Plan and prepare

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details relevant to the tasks are obtained, confirmed and applied to the allotted task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
- 1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented
- 1.4 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

- 
- |   |                                |  |
|---|--------------------------------|--|
| 2 | Set up patching truck          | 2.1 Pre-operational checks are carried out in accordance with organisation, manufacturer or site authorised procedures                                   |
|   |                                | 2.2 Operating components of the truck are checked for serviceability   |
|   |                                | 2.3 Tank is checked for prevention of contamination  |
|   |                                | 2.4 Tank is filled with the required materials to perform repair operations  |
|   |                                | 2.5 Standard mix of emulsion is determined ready for application   |
| 3 | Repair damaged surfaces        | 3.1 Start up, park, shut down procedures are carried out in accordance with manufacturers' and site requirements   |
|   |                                | 3.2 Truck is positioned according to the range of the boom   |
|   |                                | 3.3 Boom is positioned manually or automatically over the area to be repaired  |
|   |                                | 3.4 Area to be repaired is blown free of dust and debris   |
|   |                                | 3.5 Patching material is applied to the defective area under the pressure of compressed air  |
|   |                                | 3.6 Material quantities and additives are measured, calculated and recorded for each site  |
|   |                                | 3.7 Repairing operations are conducted, controlled and monitored to ensure that materials are placed to specification                                    |
| 4 | Carry out operator maintenance | 4.1 Fault finding inspections are conducted in accordance with manufacturers' specifications and organisational requirements                             |
|   |                                | 4.2 Boom and tank are maintained in good working order   |
|   |                                | 4.3 Routine operational servicing and lubrication tasks are carried out to manufacturers' and organisational requirements                                |
|   |                                | 4.4 Equipment condition reports and records are maintained in accordance with organisational requirements  |
| 5 | Clean up                       | 5.1 Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan                                  |
|   |                                | 5.2 Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices |

## Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

### Unit scope

- A patching operations truck is a purpose built machine that is able to clean the area to be patched and apply bitumen emulsion and small size aggregate to fill/repair the area to be treated, set up to carry bitumen emulsion, aggregate, tools and equipment to prepare the patch, spray the emulsion and spread the aggregate
- Damaged surfaces are to include but not be limited to pot holes, stripped or worn areas and other minor defects
- Pavement is limited to a clean dry surface which may be patched day or night
- Prescribed rates of application are to be followed within specified tolerances
- Bitumen emulsion may include but not be limited to cationic and anionic
- Patching operations with a truck mounted boom may include but not be limited to manual or automatic operating systems
- Maintaining of records is to include but not be limited to necessary calculations for quantities, rates of application achieved and a repair record for each site
- Surfaces are to include but not be limited to spray sealed roads and asphaltic concrete pavement
- Patching work is to include but not be limited to vehicle being positioned so that hoses/boom are not run over, entangled or hit by other vehicles, correct pump pressure is used, area is patched to specification, and a lookout is used to watch hoses/boom and for other workers/public
- Traffic control signage may include but not limited to escort vehicle, highway traffic signs, site safety signage, temporary signage for the benefit of motorists and pedestrians, and traffic conditions signage

**Unit scope (continued)**

- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements
- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas, buildings, parking sites and pedestrian areas
- Site locations may include but not be limited to roads, streets, car parks, airport runways, container yards, hard stands, footpaths, bikeways and roadways

**Safety (OH&S)**

- OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances
- Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices
- Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with traffic, uneven/unstable terrain, poles, dirt mounds, overhead service lines, bridges, surrounding buildings, obstructions, structures, facilities, dangerous materials, recently filled trenches, other machines, personnel, traffic control, working in proximity to others, worksite visitors and the public
- Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement
- Hazards and risks may include but not be limited to uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials
- Emergency procedures related to equipment operation are to include but may not be limited to emergency shutdown and stopping, extinguishing equipment fires, organisational first aid requirements and evacuation

<b>Environmental Requirements</b>	<ul style="list-style-type: none"> <li>• Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management</li> </ul>
<b>Quality Requirements</b>	<ul style="list-style-type: none"> <li>• Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction</li> </ul>
<b>Statutory/Regulatory Authorities</b>	<ul style="list-style-type: none"> <li>• State/Regulatory Authorities may include Federal, State and Local Authorities</li> </ul>
<b>Tools and equipment</b>	<ul style="list-style-type: none"> <li>• Tools and equipment are to include but not be limited to patching trucks with boom attachments and compressed air units</li> </ul>
<b>Materials</b>	<ul style="list-style-type: none"> <li>• Materials are to include but not be limited to bitumen emulsion and aggregates</li> </ul>
<b>Communications</b>	<ul style="list-style-type: none"> <li>• Communications are to include but not limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li> </ul>
<b>Information</b>	<ul style="list-style-type: none"> <li>• Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, maps, material safety data sheets (MSDS) and diagrams or sketches</li> <li>• Safe work procedures or equivalent related to the conducting of patching operations</li> <li>• Regulatory/legislative requirements pertaining to the conducting of patching operations</li> <li>• Manufacturers' specifications and instructions</li> <li>• Organisation work specifications and requirements.</li> <li>• Instructions issued by authorised organisational or external personnel</li> <li>• Relevant Australian Standards and Austroads</li> <li>• AAPA advisory notes and codes of practice</li> </ul>

## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- Completion of patching operations for a minimum of 20m<sup>2</sup> of road surface defects by loading and mixing the specified materials and patching the damaged areas to specification
- Completion of all records of patching work undertaken and materials used for each site
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

### Relationship to other units

- Pre-requisite units are:  
BCCCM1001C Follow OH&S policies and procedures  
  
Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

**Specific knowledge required to achieve the performance criteria**

- A knowledge of
  - Site and equipment safety requirements
  - Bitumen patching procedures
  - Bituminous materials and their characteristics
  - Aggregate properties and conformance
  - Pavement defects
  - Equipment types, characteristics, technical capabilities and limitations
  - Operational, maintenance and basic diagnostic procedures
  - Site isolation and traffic control responsibilities and authorities
  - Processes for the calculation of material requirements and application rates
  - Materials Safety Data Sheets and materials handling methods
  - Project quality requirements
  - Civil construction terminology
  - JSA's/Safe work method statements

**The context of assessment**

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

**Methods of assessment**

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

**Specific resource requirements for this unit**

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to patching operations
  - hand and power tools, plant and equipment appropriate to patching operations
  - specifications and work instructions

**... End ...**



## BCCBS3011B

### Unit Descriptor

## Produce asphalt products

This unit specifies the competency required to blend raw materials in the correct proportions to produce hot mix and cold mix in preparation for road surfacing operations. It includes the minimum criteria for competency assessment.

This unit includes mixing, heating and loading the mix.

### Employability Skills

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

### Element

Elements define the essential outcomes of a unit of competency.

### Performance Criteria

Performance criteria specify the level of performance required to demonstrate achievement of the element.

#### 1 Plan and prepare

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details relevant to the tasks are obtained, confirmed and applied to the allotted task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task
- 1.3 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.4 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task

- |   |                                |     |  |
|---|--------------------------------|-----|--|
| 2 | Operate plant                  | 2.1 | Production requirements are determined   |
|   |                                | 2.2 | Aggregate and sand are regularly tested for compliance as it arrives   |
|   |                                | 2.3 | Cold feed bins are monitored to ensure sufficient raw material is maintained   |
|   |                                | 2.4 | Proportion of material allocation is set to batch requirements   |
|   |                                | 2.5 | Mix design is selected to batch requirements   |
|   |                                | 2.6 | Material is heated and mixed to the correct temperature and tolerance  |
|   |                                | 2.7 | Material is stored ready for dispatch and loading  |
|   |                                | 2.8 | Loading operations are monitored   |
|   |                                | 2.9 | Mixed material is tested regularly for bitumen content and grading   |
| 3 | Carry out operator maintenance | 3.2 | Fault finding inspections are conducted in accordance with specifications and plant requirements   |
|   |                                | 3.3 | Equipment and mixing chamber are maintained in good working order  |
|   |                                | 3.4 | Routine operational servicing and lubrication tasks are carried out to specification and organisational requirements                                 |
|   |                                | 3.5 | Equipment condition reports and records are maintained in accordance with plant requirements   |
| 4 | Clean up                       | 4.2 | Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan                                  |
|   |                                | 4.3 | Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices |

## Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

<b>Unit scope</b>	<ul style="list-style-type: none"> <li>• Cold mix (also known as pre-mix or SMK) is used for temporary patching of potholes, walkways, bike tracks and temporary pavements</li> <li>• Hot mix is used for roads, car parks and other long term requirements</li> <li>• Cold mix is usually produced at a lower temperature with cutter added to make the mix softer and extend usability</li> <li>• Types of plant are to include fixed plant and may include mobile plant</li> <li>• Temperature controls are set in accordance with the various mix designs</li> <li>• Loading operations include a loader and trucks</li> <li>• Testing is to include but not be limited to bitumen content, grading and may include maximum theoretical density, bulk density, voids, stability and flow</li> <li>• Maintaining of records is to include but not be limited to necessary calculations for quantities and rates of production achieved</li> <li>• Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements</li> </ul>
<b>Safety (OH&amp;S)</b>	<ul style="list-style-type: none"> <li>• OH&amp;S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances</li> <li>• Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices</li> <li>• Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with moving machinery, flammable, toxic and dangerous materials, personnel, working in proximity to others, worksite visitors and the public</li> <li>• Emergency procedures related to equipment operation are to include but may not be limited to emergency shutdown and stopping, extinguishing equipment fires, organisational first aid requirements and evacuation</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>• Environmental requirements are to include but are not</li> </ul>

<b>Requirements</b>	limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management
<b>Quality Requirements</b>	<ul style="list-style-type: none"><li>• Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction</li></ul>
<b>Statutory/Regulatory Authorities</b>	<ul style="list-style-type: none"><li>• State/Regulatory Authorities may include Federal, State and Local Authorities</li></ul>
<b>Tools and equipment</b>	<ul style="list-style-type: none"><li>• Tools and equipment are to include but not be limited to asphalt plant and loaders</li></ul>
<b>Materials</b>	<ul style="list-style-type: none"><li>• Materials are to include but not be limited to aggregates, sand, various grades and types of bitumen, fly ash, additives, cutters and may include bitumen emulsions</li></ul>
<b>Communications</b>	<ul style="list-style-type: none"><li>• Communications are to include but not limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li></ul>
<b>Information</b>	<ul style="list-style-type: none"><li>• Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, maps, material safety data sheets (MSDS) and diagrams or sketches</li><li>• Safe work procedures or equivalent related to the production of asphalt products</li><li>• Regulatory/legislative requirements pertaining to the production of asphalt products</li><li>• Manufacturers' specifications and instructions</li><li>• Organisation work specifications and requirements</li><li>• Instructions issued by authorised organisational or external personnel</li><li>• Relevant Australian Standards and Austroads</li><li>• AAPA advisory notes and codes of practice</li></ul>

## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with site safety plan, OH&S regulations and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- Completion of programming and planning of the mix specification for three separate mixes, with the temperature and mix produced within tolerance for 300 tonne of mix, without plant down time
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

### Relationship to other units

- Pre-requisite units are:

BCCCM1001C Follow OH&S policies and procedures

Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

**Specific knowledge required to achieve the performance criteria**

- A knowledge of
  - Site and equipment safety requirements
  - Plant operations
  - Batching systems
  - Mix specifications (temperatures and tolerances)
  - Production requirements
  - Bituminous materials and their characteristics
  - Aggregate and sand properties and conformance
  - Additives
  - Processes for heating bitumen and controlling temperature
  - Testing procedures
  - Equipment types, characteristics, technical capabilities and limitations
  - Operational, maintenance and basic diagnostic procedures
  - Processes for the calculation of material requirements and application rates
  - Materials Safety Data Sheets and materials handling methods
  - Project quality requirements
  - Civil construction terminology
  - JSA's/Safe work method statements

**The context of assessment**

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

**Methods of assessment**

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

**Specific resource requirements for this unit**

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to producing asphalt products
  - hand and power tools, plant and equipment appropriate to producing asphalt products
  - specifications and work instructions

**... End ...**





## BCCBS3012B

### Unit Descriptor

## Conduct bitumen tanker operations

This unit specifies the competency required to operate a bitumen bulk tanker to transport bituminous materials as part of bituminous surfacing operations. It includes the minimum criteria for competency assessment.

This unit includes transporting a variety of bituminous materials to depots and roadside locations in a purpose built vehicle.

### Employability Skills

The required outcomes described in this Unit of Competency contain applicable facets of employability skills. The Employability Skills Qualification Summary for the qualification in which this Unit of Competency is packaged will assist in identifying employability skill requirements.

### Element

Elements define the essential outcomes of a unit of competency.

### Performance Criteria

Performance criteria specify the level of performance required to demonstrate achievement of the element.

#### 1 Plan and prepare

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allocated task
- 1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allocated task
- 1.3 Plant, tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported
- 1.4 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allocated task

#### 2 Set up tanker for operation

- 2.1 Pre-operational checks are carried out in accordance with organisation, manufacturer or site authorised procedures
- 2.2 Ancillary tanks are filled and adequate materials are determined to perform tanker operations
- 2.3 Tanks are checked for prevention of contamination
- 2.4 Load details, including correct amount of any additives are obtained

- |   |                                |  |
|---|--------------------------------|--|
| 3 | Load tanker                    | 3.1 Previous load details are checked for compatibility  |
|   |                                | 3.2 Tank is loaded with the prescribed amount of material  |
|   |                                | 3.3 Additives are added and mixed to specifications  |
|   |                                | 3.4 Temperature of the material is checked to comply with manufacturers' specifications  |
|   |                                | 3.5 Material quantities and additives are measured, calculated and recorded  |
|   |                                | 3.6 Materials are heated in accordance with manufacturers'/suppliers' instructions   |
| 4 | Transfer materials             | 4.1 Transfer site set up is performed according to Austroads Bitumen Sealing Safety Guide  |
|   |                                | 4.2 Transfer procedures are confirmed with depot supervisor/sprayer driver   |
|   |                                | 4.3 Materials are transferred in accordance with organisational procedures   |
|   |                                | 4.4 Details of materials transferred are recorded  |
| 5 | Empty tanker                   | 5.1 Tank is emptied into storage or waste in accordance with environmental plan  |
|   |                                | 5.2 Tank interior is cleaned in accordance with organisation instructions or Austroads Bitumen Sealing Safety Guide                                      |
| 6 | Carry out operator maintenance | 6.1 Fault finding inspections are conducted in accordance with manufacturers' specifications and organisational requirements                             |
|   |                                | 6.2 Routine operational servicing and lubrication tasks are carried out to manufacturers' and organisational requirements                                |
|   |                                | 6.3 Equipment condition reports and records are maintained in accordance with organisational requirements  |
| 7 | Clean up                       | 7.1 Work area is cleared and materials disposed of or recycled in accordance with the project environmental management plan                              |
|   |                                | 7.2 Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices |

## Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables relate to this particular unit:

### Unit scope

- Bitumen tankers are vehicles which are purpose built, self contained units and have the capability to load, unload, heat, transfer and circulate materials using their own pumping and heating systems
- Bitumen tankers may be truck mounted, semi trailers, towed or any other purpose built mechanically operated tanker
- Maintaining of records is to include but not be limited to necessary calculations for quantities of materials delivered
- Planning and preparation is to include but not be limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements
- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road un-trafficked areas and parking sites
- Site locations may include but not be limited to roadways, car parks, container yards, hard stands, manufacturers' depots and refineries

**Safety (OH&S)**

- OH&S requirements are to be in accordance with State or Territory legislation and regulations, organisational safety policies and procedures, and project safety plan. This may include protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, bitumen hoses, use of fire fighting equipment, use of first aid equipment, hazard control and hazardous materials and substances
- Safe parking practices are to include but not be limited to ensuring access ways are clear, equipment or machinery is away from overhangs and refuelling sites, safe distance from excavations, secured from unauthorised movement and in accordance with legal requirements and the Austroads Bitumen Sealing Safety Guide instructions
- Safe operating procedures are to include but not be limited to recognising and preventing hazards associated with traffic, uneven/unstable terrain, poles, underground and overhead services, bridges, buildings, obstructions, structures, facilities, dangerous materials, other machines, personnel, traffic control, working in proximity to others, worksite visitors and the public
- Hazards and risks may include but not be limited to hazards associated with hot bitumen products, uneven/unstable terrain, trees, fires, overhead and underground services, bridges, building, excavations, traffic, embankments, cuttings, structures and hazardous materials
- Emergency procedures related to equipment operation are to include but may not be limited to emergency shutdown and stopping, extinguishing equipment fires, bitumen burns and may include organisational first aid requirements, evacuation and refinery/depot safety procedures
- Personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices

**Environmental Requirements**

- Environmental requirements are to include but are not limited to organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management.

<b>Quality Requirements</b>	<ul style="list-style-type: none"> <li>Quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction.</li> </ul>
<b>Statutory/Regulatory authorities</b>	<ul style="list-style-type: none"> <li>Statutory/regulatory authorities may include Federal, State and Local Authorities</li> </ul>
<b>Tools and equipment</b>	<ul style="list-style-type: none"> <li>Tools and equipment are to include but not limited to bitumen tankers, bitumen transfer hoses, rags, basic tool kits, volume correction tables, earthing equipment and may include end shields, LPG gas bottles and lighters</li> </ul>
<b>Materials</b>	<ul style="list-style-type: none"> <li>Materials are to include but not limited to bitumen, cutback bitumen and polymer modified binders (PMB), kerosene and distillate and may include multi-grade bitumen, bitumen emulsions and adhesion agents</li> </ul>
<b>Communications</b>	<ul style="list-style-type: none"> <li>Communications are to include but not limited to verbal instructions and fault reporting and may include two way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li> </ul>
<b>Information</b>	<ul style="list-style-type: none"> <li>Information sources may include but not be limited to verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, charts and hand drawings, memos, maps, material safety data sheets (MSDS) and diagrams or sketches</li> <li>Safe work procedures or equivalent related to the bitumen tanker operations.</li> <li>Regulatory/legislative requirements pertaining to the bitumen tanker operations</li> <li>Manufacturers' specifications and instructions</li> <li>Organisation work specifications and requirements</li> <li>Instructions issued by authorised organisational or external personnel</li> <li>Relevant Australian Standards and Austroads</li> <li>AAPA advisory notes and codes of practice</li> </ul>

## Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria, the Range Statement, and the Assessment Guidelines of the Training Package.

### Critical aspects of evidence required to demonstrate competency in this unit

- Location, interpretation and application of relevant information, standards and specifications
- Compliance with OH&S regulations, site safety plan and State/Territory legislation applicable to workplace operations
- Compliance with organisational policies and procedures including quality requirements
- Transfer a minimum of three different materials, one of which must be a PMB, to be loaded from a refinery or depot
- Transfer a minimum of three different materials, one of which must be a PMB, mixed and heated
- Transfer a minimum of three different materials, one of which must be a PMB, transferred to at least one roadside and one storage depot
- Calculation and recording of all details for the activities in the three previous dot points
- Compliance with the instructions for transferring listed in Austroads Bitumen Sealing Safety guide
- Safe and effective operational use of tools, plant, bitumen hoses and equipment
- Communication and working effectively and safely with others

### Relationship to other units

- Pre-requisite units are:  
BCCCM1001C Follow OH&S policies and procedures  
  
Competency in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

**Specific knowledge required to achieve the performance criteria**

- A knowledge of
  - Bituminous materials
  - Site and equipment safety requirements
  - Bituminous materials and their characteristics
  - Processes for heating bitumen
  - Operational, maintenance and basic diagnostic procedures
  - Materials Safety Data Sheets and materials handling methods
  - Treatment for bitumen burns
  - Quality requirements and environmental systems and standards
  - Handling and safe use of bitumen hoses
  - Civil construction terminology
  - JSA's/Safe work method statements

**The context of assessment**

- The application of competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements

**Methods of assessment**

- Assessment must satisfy the endorsed assessment guidelines of the Building and Construction industry's Civil Construction Training Package
- Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge
- Assessment methods must confirm the ability to access and correctly interpret and apply the essential underpinning knowledge
- Assessment may be applied under project related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency, including those listed above

**Specific resource requirements for this unit**

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to bitumen tanker operations
  - hand and power tools, plant and equipment appropriate to bitumen tanker operations
  - specifications and work instructions

**... End ...**