<table>
<thead>
<tr>
<th>Code</th>
<th>Task Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCCRM2001C</td>
<td>Escort mobile road marking operations</td>
<td>1075</td>
</tr>
<tr>
<td>BCCRM2002B</td>
<td>Handle and store road marking materials</td>
<td>1083</td>
</tr>
<tr>
<td>BCCRM2003B</td>
<td>Conduct pedestrian road marking operations</td>
<td>1091</td>
</tr>
<tr>
<td>BCCRM2004B</td>
<td>Prepare surface for road marking</td>
<td>1099</td>
</tr>
<tr>
<td>BCCRM2005B</td>
<td>Conduct road marking measuring operations</td>
<td>1107</td>
</tr>
<tr>
<td>BCCRM2006B</td>
<td>Conduct airless and atomised spraying operations</td>
<td>1115</td>
</tr>
<tr>
<td>BCCRM2007B</td>
<td>Install raised pavement markers</td>
<td>1123</td>
</tr>
<tr>
<td>BCCRM3001B</td>
<td>Conduct ride on road marking operations</td>
<td>1131</td>
</tr>
<tr>
<td>BCCRM3002B</td>
<td>Conduct long line road marking operations</td>
<td>1139</td>
</tr>
<tr>
<td>BCCRM3003C</td>
<td>Conduct thermo plastic road marking operations</td>
<td>1149</td>
</tr>
</tbody>
</table>
BCCRM2001C Escort mobile road marking operations

Unit Descriptor

This unit specifies the competency required to escort mobile line marking operations to ensure safe vehicular movement around road marking operations. It includes the minimum criteria for competency assessment.

This unit includes selection of equipment, signage, radio communication and control positioning.

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 Performance Criteria

Elements define the essential outcomes of a unit of competency.

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 Vehicles, 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 Establish traffic control operations

2.1 Arrow boards and/or rotating beacon warning signs are checked for serviceability and suitability

2.2 Traffic control requirements are determined

2.3 Traffic control equipment is selected in accordance with site and road traffic requirements

2.4 Site and traffic variables are assessed and recorded

2.5 Advance warning signs and traffic control devices are positioned as specified

2.6 Maximum speed limit for traffic control operations is correctly determined and confirmed

3 Use radio communication

3.1 Radio controls are adjusted for optimum transmission and reception

3.2 Radio contact is tested and verified

3.3 Radio messages are clearly and concisely transmitted

3.4 Radio contact is periodically checked

4 Position traffic controls

4.1 Traffic control signs are positioned and displayed on vehicles

4.2 Vehicle warning lights are displayed and operated

4.3 Vehicles are positioned in the work convoy according to specifications

4.4 Work crew is assisted to place advanced warning signs as required

4.5 Traffic is controlled effectively to protect work crew

5 Clean up

5.1 Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan

5.2 Vehicles, 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

• Mobile traffic control signage may include but not be limited to escort vehicles, vehicle mounted signage, highway traffic signs, site safety signage, temporary signage for the benefit of motorists and pedestrians, and traffic conditions signage

• Radio transmissions are to include but not be limited to VHF and UHF

• 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 are to only include visibility day or night and dry weather

• Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas and highways

• Site locations may include but not be limited to roads, bridges and similar sealed surfaces

Safety (OH&S)

• OH&S requirements are to be in accordance with State or Territory legislation and regulations (including general safety/industry induction requirements), 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 overhead services, 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
| Safety (OH&S) (continued) | • 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 |
| Statutory/Regulatory Authorities | • State/Regulatory Authorities may include Federal, State and Local Authorities |
| Tools and equipment | • Tools and equipment are to include but not limited to traffic control vehicles, radios, batteries, signage, warning lights and beacons and arrow boards |
| Communications | • 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 |
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 mobile temporary traffic control operations
- Regulatory/legislative requirements pertaining to the mobile temporary traffic control operations
- Manufacturers’ specifications and instructions
- Organisation work specifications and requirements.
- Instructions issued by authorised organisational or external personnel
- Relevant Australian Standards

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
- Escort mobile line marking operations for a minimum of 5 kilometres of each of the following, with an escort vehicle to the specified tolerances:
  - Centre line on a two way radio
  - Separation line (broken) on a multilane road
  - Edge line on a multilane road
- Safe and effective operational use of tools, plant and equipment
- Communication and working effectively and safely with others

Relationship to other units

- 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
  - Mobile traffic control and general traffic control
  - 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 travel speed
  - Project quality requirements
  - Civil construction terminology
  - Project traffic management plans
  - 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 mobile traffic control operations
  - hand and power tools, plant and equipment appropriate to mobile traffic control operations
  - specifications and work instructions
BCCRM2002B

Handle and store road marking materials

Unit Descriptor
This unit specifies the competency required to handle, store and dispose of road marking materials according to manufacturers’ recommendations. It includes the minimum criteria for competency assessment.

This unit includes manual and mechanical handling of road marking materials in preparation for use.

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 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 Manually handle road materials** | **2.1** Road marking materials are identified, selected and sorted for particular tasks to manufacturers’ recommendations and/or supervisor’s instructions/specifications |
|   |   | **2.2** Handling characteristics of materials are identified and appropriate handling techniques applied |
|   |   | **2.3** Specific handling requirement for hazardous materials are applied according to material safety data sheets (MSDS) and regulatory requirements |
|   |   | **2.4** Materials are protectively placed, clear of traffic ways, so that they are easily identified, retrieved and not damaged |
|   |   | **2.5** Signage and barricades are erected where applicable, to isolate stored materials from workplace traffic or public access |
|   | **3 Mechanically handle materials** | **3.1** Materials are prepared for mechanical handling in accordance with type of material and plant/equipment to be used |
|   |   | **3.2** Loading, unloading, moving, locating and/or installing of materials is conducted in accordance to job requirements |
|   |   | **3.3** Materials are safely mechanically handled according to manufacturers’ recommendations |
|   | **4 Handle and remove waste safely** | **4.1** Waste materials are handled correctly and safely according to material safety data sheets (MSDS) and requirements of regulatory authorities |
|   |   | **4.2** Hazardous material are identified for separate handling |
|   |   | **4.3** Non-toxic materials are disposed of using correct procedures |
|   | **5 Clean up** | **5.1** Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan |
|   |   | **5.2** Unused materials are safely stacked, stock piled or stored in, accordance with job requirements |
|   |   | **5.3** 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

- Removal of materials is to include but not be limited to recycling and salvage
- 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
- Site locations may include but not be limited to on site storage facilities and depot storage facilities

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 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/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
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.

Tools and equipment
- Tools and equipment may include but not limited to pallet trolley, materials hoist, forklift and vehicle mounted crane.

Materials
- Materials are to include but not limited to paints, solvent, long life products (two pack epoxy, thermo plastic), glass beads and skid resistant additives.

Communications
- 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.

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 handling and storing of road marking materials.
- Regulatory/legislative requirements pertaining to the handling and storing of road marking materials.
- Manufacturers’ specifications and instructions.
- Organisation work specifications and requirements.
- Instructions issued by authorised organisational or external personnel.
- Relevant Australian Standards.
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
- Safe storage procedures for a combination of any two of paint, solvent, glass beads, epoxy, additives and thermo-plastic on two projects in accordance with MSDS requirements
- Safe and effective operational use of tools, small 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
  - Road marking 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
  - 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 handling and storage of road marking materials
  - hand and power tools, plant and equipment appropriate to handling and storage of road marking materials
  - specifications and work instructions

... End ...
BCCRM2003B  Conduct pedestrian road marking operations

Unit Descriptor

This unit specifies the competency required to operate and maintain a walk behind pedestrian road marking machine to apply road marking materials on roads, public and private sealed areas to specification. It includes the minimum criteria for competency assessment.

This unit includes the use of hand held applicators.

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 Select fuel, lubricants, tools and equipment

2.1 Fuel and lubricants are selected according to manufacturers’ manual

2.2 Tools and equipment are selected in accordance with required machinery checks
3 Carry out operator checks and maintenance

3.1 Fuel, oil, hydraulic fluid filters and water levels are checked and adjusted according to manufacturers’ manual

3.2 Bolts, nuts and attachment couplings are tightened and maintained to manufacturers’ manual specifications

3.3 Function of controls and gauges are checked and adjusted where necessary in accordance with the manufacturers’ manual

3.4 Standard start up and shut down procedures are conducted in accordance with the operators’ manual

3.5 Periodic maintenance is carried out in accordance with the operators’ manual

3.6 Plant and equipment are safely located when not in immediate use

4 Use pedestrian road marking plant

4.1 Site hazards are identified for use of road marking plant

4.2 Lines are configured to specification based on a computerised program

4.3 New lines are applied to the new or resurfaced area

4.4 New lines are superimposed over old lines on existing surfaces

4.5 Line cut on/cut off device is operated according to the job specification

4.6 Road marking material is applied to the surface providing an even coverage in accordance with the job specification

5 Clean up

5.1 Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan

5.2 Surplus fuel, lubricants, paints and beads are returned to storage

5.3 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**
  - Marking of lines is to include but not be limited to transverse and longitudinal markings
  - Pedestrian road marking machine will be equal to or less than 40 litre tank capacity and may include the use of a self propelled drive
  - Types of transverse and longitudinal markings may include but not be limited to edge lines, arrows, lane lines (broken and unbroken), separation lines (broken and unbroken), barrier lines (one direction and both directions) continuity lines, turn lines, outline, stop lines, holding lines, give way lines, pedestrian crosswalk lines, diagonal and chevron markings, numerals, parking areas and kerb markings
  - Line marking may be applied to but not be limited to chip seal, asphalt or concrete
  - Traffic control devices 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 are to only include dry weather by day or night
  - 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, bridges, foot paths, sports courts and fields, car parks, cycle paths, factories, airports, walking tracks and similar sealed surfaces
Safety (OH&S)  
- OH&S requirements are to be in accordance with State or Territory legislation and regulations and 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 overhead services, 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

Statutory/Regulatory Authorities
- State/Regulatory Authorities may include Federal, State and Local Authorities
Tools and equipment
- Tools and equipment are to include but not limited to walk behind pedestrian road marking equipment (self propelled or standard), hand held applicators, filters, spray tips and maintenance tools

Materials
- Materials are to include but not limited to paints, solvents, long life products (two pack epoxy, thermoplastic), glass beads and skid resistant additives

Communications
- 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

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 pedestrian road marking operations
  - Regulatory/legislative requirements pertaining to the pedestrian road marking operations
  - Manufacturers’ specifications and instructions
  - Organisation work specifications and requirements.
  - Instructions issued by authorised organisational or external personnel
  - Relevant Australian Standards
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
- Placement of a minimum of 20m² of new marking or remarking of existing markings are to be placed with a walk behind pedestrian road marking machine to the specified tolerance. This is to include any four of the types listed in the Unit Scope
- Placement of a minimum of 100 lineal metres of new line marking or remarking of existing markings with a pedestrian road marking machine to the specified tolerance. This is to include any four of the types listed in the Unit Scope
- Safe and effective operational use of tools, small 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
  - Walk behind pedestrian road marking activities and techniques
  - Road markings
  - Road marking 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

Specific resource requirements for this unit

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

... End ...
**BCCRM2004B**

**Prepare surface for road marking**

**Unit Descriptor**

This unit specifies the competency required to prepare and set out the substrate by manual and mechanical means to specification in readiness for the application of road marking materials. It includes the minimum criteria for competency assessment.

This unit includes the mechanical removal of road markings.

**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**

**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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<th></th>
<th>Prepare surface and set out</th>
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<td></td>
<td>2.1 Hazards and fixtures are removed from the area</td>
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<td>2.2 Equipment and/or product is selected and prepared for removing markings</td>
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<td>2.3 Location for line marking is identified</td>
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<td>2.4 Area is cleared of dirt, debris and other contaminants</td>
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<td>2.5 Location for line marking is identified and set out with control points to drawings, job requirements and/or specifications</td>
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<td>2.6 Straight lines and curves are spotted in preparation for marking</td>
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<td>2.7 Pre-existing visible marks/lines are removed to specification</td>
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3 Clean up

3.1 Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan

3.2 Unused materials are stored in accordance with job requirements

3.3 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

• Old line removal methods may include but not be limited to water grit blasting, shot blasting, grinding, sand blasting and water blasting

• Marking of lines to be prepared for are to include but not be limited to transverse and longitudinal markings

• Types of transverse and longitudinal markings may include but not be limited to barrier lines (one direction and both directions), edge lines, arrows, shapes, symbols, lane lines (broken and unbroken), separation lines (broken and unbroken), continuity lines, turn lines, outline, stop lines, holding lines, stop and give way lines, pedestrian crosswalk lines, diagonal and chevron markings, numerals, parking areas and kerb markings

• Substrate preparation may be applied to but not be limited to chip seal, asphalt or concrete

• Traffic control devices 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
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
- Weather conditions are to only include dry weather by day or night
- 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, bridges, foot paths, sports courts and fields, car parks, cycle paths, factories, airports, walking tracks and similar sealed surfaces

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 overhead services, 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 are to include but may not be limited to 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.

Statutory/Regulatory Authorities

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

Tools and equipment

- Tools and equipment are to include but not limited to scrapers, brooms, shovels, line grinders, planers, sand blasters, water blasters, emulsion sprayers, water trucks and shot blasters.

Materials

- Materials are to include but not limited to abrasives and emulsions.

Communications

- 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.

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 substrate preparation.
  - Regulatory/legislative requirements pertaining to the substrate preparation.
  - Manufacturers’ specifications and instructions.
  - Organisation work specifications and requirements.
  - Instructions issued by authorised organisational or external personnel.
  - Relevant Australian Standards.
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
- Preparation of surface to remove markings for a minimum of 20m² of new markings in accordance with drawings and specifications. This is to include any four of the following markings types; arrows, shapes, stop lines, holding lines, stop and give way lines, pedestrian crosswalk lines, diagonal and chevron markings, words, numerals, parking areas and kerb markings
- Preparation of surface to remove markings for a minimum of 40 linear metres of new markings in accordance with drawings and specifications. This is to include any four of the following markings types; separation (broken), barrier (one direction), barrier (both directions) and edge line
- Set out transverse markings for a minimum of 50m² of new line markings in accordance with drawings and specifications
- Set out of longitudinal markings for a minimum of 5 kilometres of new markings in accordance with drawings and specifications
- Safe and effective operational use of tools, small 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
  - Substrate preparation techniques and processes
  - Road markings
  - Redundant marking removal materials and primers
  - 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 curing times
  - 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 substrate preparation
  - hand and power tools, plant and equipment appropriate to substrate preparation
  - specifications and work instructions

… End …
### BCCRM2005B Conduct road marking measuring operations

#### Unit Descriptor

This unit specifies the competency required to use measuring equipment and devices for road marking operations. It includes the minimum criteria for competency assessment.

This unit includes measuring for the purposes of set out, checking tolerances against specification and quantifying measurements to generate quotations and payment.

#### 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 Performance Criteria

Elements define the essential outcomes of a unit of competency.

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. **Obtain measurements**
   - 2.1 Appropriate device or equipment to achieve required measurement is selected
   - 2.2 Correct and appropriate measuring technique is used according to manufacturers’ manual
   - 2.3 Finest graduation of device is measured and recorded without error
   - 2.4 Measurements are obtained and recorded
<table>
<thead>
<tr>
<th></th>
<th>Maintain measuring devices</th>
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<tbody>
<tr>
<td>3.1</td>
<td>Routine care and storage of devices is undertaken to manufacturers’ specification or standard operating procedure</td>
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<tr>
<td>3.2</td>
<td>Measuring devices are checked and calibrated</td>
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</tbody>
</table>
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:

Unit scope

- Lines to be measured are to include but not be limited to transverse and longitudinal markings

- Types of transverse and longitudinal markings may include but not be limited to barrier lines (one direction and both directions), edge lines, arrows, shapes, symbols, lane lines (broken and unbroken), separation lines (broken and unbroken), continuity lines, turn lines, outline, stop lines, holding lines, stop and give way lines, pedestrian crosswalk lines, diagonal and chevron markings, numerals, parking areas and kerb markings

- Traffic control devices 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 are to only include dry weather by day or night

- 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, bridges, foot paths, sports courts and fields, car parks, cycle paths, factories, airports, walking tracks and similar sealed surfaces
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 overhead services, 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

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

Tools and equipment

- Tools and equipment are to include but not limited to measuring tapes and may include measuring wheels, gauges, rally metres and computerised measuring devices
Communications

- 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.

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 road marking measuring operations.
- Regulatory/legislative requirements pertaining to the road marking measuring operations.
- Manufacturers’ specifications and instructions.
- Organisation work specifications and requirements.
- Instructions issued by authorised organisational or external personnel.
- Relevant Australian Standards.
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
- Measurement and quantification of all road markings for:
  - one four way intersection
  - one residential street
  - one 2 kilometre section of road
  - one car park
- Safe and effective operational use of tools, small 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
  BCCCM1004B Carry out measurements and calculations
- 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
  - Road marking measuring procedures
  - Road markings
  - 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 usage, application rates and costings
  - 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
  - hand and power tools, plant and equipment appropriate to measuring operations
  - specifications and work instructions

... End ...
BCCRM2006B Conduct airless and atomised spraying operations

Unit Descriptor
This unit specifies the competency required to apply road marking paints safely and effectively on roads, public and private sealed areas to specifications. It includes the minimum criteria for competency assessment.

This unit includes the process of preparing the surface, the preparation and application of marking materials and the measurement of completed marking.

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 surface and set out
2.1 Area is cleared of dirt, debris and other contaminants
2.2 Location for line marking is identified and set out with control points to requirements or specifications
2.3 Straight lines and curves are spotted in preparation for marking
2.4 Pre-existing visible marks/lines are removed to specification
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| **3** | **Prepare marking materials** | 3.1 Marking material is mixed and prepared in accordance with manufacturers’ and job specifications  
3.2 Additives and consistency of material are adjusted to allow easy application and appropriate drying time to manufacturers’ recommendations  
3.3 Marking material is transferred carefully to applicator container |
| **4** | **Apply road marking materials** | 4.1 Equipment relevant to the task is selected and prepared for operation  
4.2 Airless and/or atomised spray equipment is applied across the surface with the correct movement and pressure  
4.3 Road marking material is applied to the surface providing an even coverage in accordance with the job specification  
4.4 Defects in the coating are identified and corrected  
4.5 Equipment is maintained in accordance with manufacturers’ specifications |
| **5** | **Measure work** | 5.1 Work is assessed to comply with job specification, recorded and reported  
5.2 Amount of line marking completed is measured, calculated and quantified  
5.3 Non conforming work is identified and reported |
| **6** | **Clean up** | 6.1 Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan  
6.2 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

- Marking of lines is to include but not be limited to transverse and longitudinal markings
- Types of transverse and longitudinal markings may include but not be limited to barrier lines (one direction and both directions), edge lines, arrows, shapes, symbols, lane lines (broken and unbroken), separation lines (broken and unbroken), continuity lines, turn lines, outline, stop lines, holding lines, stop and give way lines, pedestrian crosswalk lines, diagonal and chevron markings, numerals, parking areas and kerb markings
- Line marking may be applied to but not be limited to chip seal, asphalt or concrete
- Traffic control devices 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 are to only include dry weather by day or night
- 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, bridges, foot paths, sports courts and fields, car parks, cycle paths, factories, airports, walking tracks and similar sealed surfaces
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 overhead services, 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.

Statutory/Regulatory Authorities

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

Tools and equipment

- Tools and equipment are to include but not limited to airless or atomised spray equipment, filters, spray tips and maintenance tools.
**Materials**

- Materials may include but not limited to paints, solvents, long life products (two pack epoxy, thermo plastic)

**Communications**

- 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

**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 airless and atomised spraying operations
  - Regulatory/legislative requirements pertaining to the airless and atomised spraying operations
  - Manufacturers’ specifications and instructions
  - Organisation work specifications and requirements.
  - Instructions issued by authorised organisational or external personnel
  - Relevant Australian Standards
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
- Organisation for the application of at least 30m$^2$ of transverse lines within tolerances specified using airless or atomised spray equipment
- 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
  - Airless and atomised spraying road marking activities and techniques
  - Road markings
  - Road marking 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 movement 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 (over time and in a range of workplace relevant contexts) 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 airless and atomised spraying road marking operations
  - equipment, hand and power tools appropriate to airless and atomised spraying road marking operations
  - specifications and work instructions

… End …
BCCRM2007B Install raised pavement markers

**Unit Descriptor**
This unit specifies the competency required to install raised pavement markers for traffic to delineate lanes and traffic flow directions. It includes the minimum criteria for competency assessment.

This unit includes temporary and permanent, reflective and non reflective raised pavement markers.

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

<table>
<thead>
<tr>
<th>Element</th>
<th>Performance Criteria</th>
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<tbody>
<tr>
<td>1 Plan and prepare</td>
<td>1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allotted task</td>
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<td></td>
<td>1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task</td>
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<td></td>
<td>1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented</td>
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<td>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</td>
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<td>1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task</td>
</tr>
<tr>
<td>2 Prepare surface and set out</td>
<td>2.1 Area is cleared of dirt, debris and other contaminants</td>
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<td>2.2 Location for raised pavement markers are identified and positioned to control points requirements or specifications</td>
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<td>2.3 Defective raised pavement markers are removed to specification where required</td>
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<td>2.4 Marked location for raised pavement markers is primed in readiness for road marking application</td>
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<td>3</td>
<td>Prepare marking materials</td>
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<td>4</td>
<td>Apply raised pavement markers</td>
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<td>5</td>
<td>Measure work</td>
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<tr>
<td>6</td>
<td>Clean up</td>
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</tbody>
</table>
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

- Raised pavement markers may include but not be limited to permanent, temporary, reflective, non-reflective and detour reflective
- Placement of raised pavement markers is to include but not be limited to transverse and longitudinal markings
- Placement of raised pavement markers may include but not be limited to barrier lines (one direction and both directions), edge lines, arrows, shapes, symbols, lane lines (broken and unbroken), separation lines (broken and unbroken), continuity lines, turn lines, outline, stop lines, holding lines, stop and give way lines, pedestrian crosswalk lines, diagonal and chevron markings, numerals, parking areas and kerb markings
- Raised pavement markers may be applied to but not be limited to chip seal, asphalt or concrete and placed on new or existing work
- Traffic control devices 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 are to only include dry weather by day or night
- 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, bridges, car parks, cycle paths, factories, airports, and similar sealed surfaces
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 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/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

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
<table>
<thead>
<tr>
<th>Statutory/Regulatory Authorities</th>
<th>State/Regulatory Authorities may include Federal, State and Local Authorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tools and equipment</td>
<td>Tools and equipment may include but not limited to walk behind pedestrian machines, hand held burners, two pack applicators and maintenance tools</td>
</tr>
<tr>
<td>Materials</td>
<td>Materials are to include but not limited to hot melt adhesives, burn on pads, two pack epoxies</td>
</tr>
<tr>
<td>Communications</td>
<td>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</td>
</tr>
<tr>
<td>Information</td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>Safe work procedures or equivalent related to the installation of raised pavement markers</td>
</tr>
<tr>
<td></td>
<td>Regulatory/legislative requirements pertaining to the installation of raised pavement markers</td>
</tr>
<tr>
<td></td>
<td>Manufacturers’ specifications and instructions</td>
</tr>
<tr>
<td></td>
<td>Organisation work specifications and requirements.</td>
</tr>
<tr>
<td></td>
<td>Instructions issued by authorised organisational or external personnel</td>
</tr>
<tr>
<td></td>
<td>Relevant Australian Standards</td>
</tr>
</tbody>
</table>
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
- Installation of 200 permanent reflective or non reflective raised pavement markers on the various line configurations
- 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
  - Raised pavement marking activities and techniques
  - Road markings
  - Raised pavement markers
  - 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 marker requirements, placement 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 raised pavement marking
  - hand and power tools, plant and equipment appropriate to raised pavement marking
  - specifications and work instructions

... End ...
<table>
<thead>
<tr>
<th><strong>BCCRM3001B</strong></th>
<th><strong>Conduct ride on road marking</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>operations</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Unit Descriptor</strong></td>
<td>This unit specifies the competency required to operate and maintain ride on road marking equipment to apply road marking materials on roads, public and private sealed areas to specification. It includes the minimum criteria for competency assessment. This unit includes both registered and non-registered ride on road marking equipment.</td>
</tr>
<tr>
<td><strong>Employability Skills</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Element</strong></td>
<td><strong>Performance Criteria</strong></td>
</tr>
<tr>
<td>Elements define the essential outcomes of a unit of competency.</td>
<td>Performance criteria specify the level of performance required to demonstrate achievement of the element.</td>
</tr>
<tr>
<td><strong>1  Plan and prepare</strong></td>
<td>1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allotted task</td>
</tr>
<tr>
<td></td>
<td>1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task</td>
</tr>
<tr>
<td></td>
<td>1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented</td>
</tr>
<tr>
<td></td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task</td>
</tr>
<tr>
<td><strong>2  Select fuel, lubricants, tools and equipment</strong></td>
<td>2.1 Fuel and lubricants are selected according to manufacturers’ manual</td>
</tr>
<tr>
<td></td>
<td>2.2 Tools and equipment are selected in accordance with required machinery checks</td>
</tr>
</tbody>
</table>
### 3 Carry out operator checks and maintenance
- **3.1** Fuel, oil, hydraulic fluid filters and water levels are checked and adjusted according to manufacturers’ manual
- **3.2** Bolts, nuts and attachment couplings are tightened and maintained to manufacturers’ manual specifications
- **3.3** Function of controls and gauges are checked and adjusted where necessary in accordance with the manufacturers’ manual
- **3.4** Standard start up and shut down procedures are conducted in accordance with the operators’ manual
- **3.5** Periodic maintenance is carried out in accordance with the operators’ manual
- **3.6** Plant and equipment are safely located when not in immediate use

### 4 Use ride on road marking plant
- **4.1** Site hazards are identified for use of road marking plant
- **4.2** Lines are configured to specification
- **4.3** New lines are applied to the new or resurfaced area providing an even coverage in accordance with job specifications
- **4.4** New lines are superimposed over old lines on existing surfaces providing an even coverage in accordance with job specifications
- **4.5** Line cut on/cut off device is operated according to the job specification

### 5 Clean up
- **5.1** Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan
- **5.2** Surplus fuel, lubricants, paints and beads are returned to storage
- **5.3** 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

- Marking of lines is to include but not be limited to longitudinal markings
- Longitudinal markings may include but not be limited to separation lines (broken and unbroken), barrier lines (one direction and both directions), edge lines, lane lines (broken and unbroken), continuity lines, turn lines and outline markings
- Ride on road marking machines will be of greater than 40 litres and less than 300 litres in tank capacity and may include but not be limited to the use of a line gap configuration computer
- Line marking may be applied to but not be limited to chip seal, asphalt or concrete
- Traffic control devices 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 are to only include dry weather by day or night
- 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, bridges, car parks, cycle paths, airports and similar sealed surfaces
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 overhead services, 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.

Statutory/Regulatory Authorities

- State/Regulatory Authorities may include Federal, State and Local Authorities.
Tools and equipment

- Tools and equipment are to include but not limited to ride on road marking equipment or similar, safety lights, filter tips and maintenance tools

Materials

- Materials may include but not be limited to paints, solvents, long life products (two pack epoxy, thermo plastic), glass beads and skid resistant additives

Communications

- 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

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 ride on road marking operations
- Regulatory/legislative requirements pertaining to the ride on road marking operations
- Manufacturers’ specifications and instructions
- Organisation work specifications and requirements.
- Instructions issued by authorised organisational or external personnel
- Relevant Australian Standards
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
- Placement of new lines for a minimum of one kilometre of each of the following, with a ride on road marking machine to the specified tolerance:
  - Centre line (to include separation line, barrier line one direction and barrier lines both directions)
  - Edge lines
- Re-marking over existing lines for a minimum of one kilometre of each of the following, with a ride on road marking machine to the specified tolerance:
  - Centre line (to include separation line, barrier line one direction and barrier lines both directions)
  - Edge lines
- Safe and effective operational use of tools, small 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
  - Ride on road marking activities and techniques
  - Road markings
  - Road marking 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

Specific resource requirements for this unit

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

... End ...
**BCCRM3002B**  
**Conduct long line road marking**

**Unit Descriptor**

This unit specifies the competency required to operate a long line road marking machine to apply road marking materials on roads, public and private sealed areas to specification. It includes the minimum criteria for competency assessment.

This unit includes truck mounted, rigid and articulated long line road marking 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**

**Performance Criteria**

Elements define the essential outcomes of a unit of competency.

<table>
<thead>
<tr>
<th>Element</th>
<th>Performance Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Plan and prepare</td>
<td>1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied to the allotted task</td>
</tr>
<tr>
<td></td>
<td>1.2 Safety requirements are obtained from the site safety plan and organisational policies and procedures, confirmed and applied to the allotted task</td>
</tr>
<tr>
<td></td>
<td>1.3 Signage requirements are identified and obtained from the project traffic management plan and implemented</td>
</tr>
<tr>
<td></td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>1.5 Environmental protection requirements are identified from the project environmental management plan, confirmed and applied to the allotted task</td>
</tr>
<tr>
<td></td>
<td>Conduct pre-operational checks</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Operate long line road marking plant</td>
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<tr>
<td>---</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>3</td>
<td><strong>3.1</strong> Engine power is managed to ensure efficiency of plant movements and to minimise damage to the engine and gears</td>
</tr>
<tr>
<td></td>
<td>3.4 Road marking material is applied to the surface providing an even coverage in accordance with job specifications</td>
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<tr>
<td></td>
<td>3.6</td>
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<tr>
<td></td>
<td>4.2</td>
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<td>4.4</td>
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<td>4.6</td>
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<tr>
<td></td>
<td>5.1</td>
</tr>
<tr>
<td></td>
<td>5.3</td>
</tr>
<tr>
<td></td>
<td><strong>5.1</strong> Work area is cleared and materials disposed of or recycled in accordance with project environmental management plan</td>
</tr>
<tr>
<td></td>
<td>5.3</td>
</tr>
</tbody>
</table>
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

- Marking of lines is to include but not be limited to longitudinal markings
- Types of longitudinal markings may include but not be limited to separation lines (broken and unbroken), barrier lines (one direction and both directions), lane lines (broken and unbroken), edge lines, separation lines, continuity lines and outline markings
- Line marking may be applied to but not be limited to chip seal, asphalt or concrete
- Long line road marking machines will have a greater tank capacity of 300 litres and a line gap configuration computer and may include but not be limited to truck mounted, rigid and articulated
- Traffic control devices 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 are to only include dry weather by day or night
- 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, bridges, airports and similar sealed surfaces
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 overhead services, 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

Statutory/Regulatory Authorities • State/Regulatory Authorities may include Federal, State and Local Authorities
Tools and equipment
- Tools and equipment are to include but not limited to long line road marking equipment (may be single or two person operation) equipped with line configuration computers, filters, tips and basic tool kits

Materials
- Materials may include but not limited to paints, solvents, long life products (two pack epoxy, thermo plastic), glass beads and skid resistant additives

Communications
- 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

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 long line road marking operations
- Regulatory/legislative requirements pertaining to the long line road marking operations
- Manufacturers’ specifications and instructions
- Organisation work specifications and requirements.
- Instructions issued by authorised organisational or external personnel
- Relevant Australian Standards
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
- Placement of new lines for a minimum of five kilometres of each of the following, with a long line road marking machine to the specified tolerance:
  - Centre line (to include separation line, barrier line one direction and barrier line both directions)
  - Edge lines
- Re-marking over existing lines for a minimum of five kilometres of each of the following, with a long line road marking machine to the specified tolerance:
  - Centre line (to include separation line, barrier line one direction and barrier line both directions)
  - Edge lines
- 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
  - Long line road marking activities and techniques
  - Road markings
  - Road marking 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

Specific resource requirements for this unit

- The following resources should be made available:
  - workplace location or simulated workplace
  - materials relevant to long line road marking operations
  - hand and power tools, plant and equipment appropriate to long line road marking operations
  - specifications and work instructions
BCCRM3003C Conduct thermo plastic road marking operations

Unit Descriptor
This unit specifies the competency required to apply road marking thermo plastic materials safely and effectively on roads, public and private sealed areas to specifications. It includes the minimum criteria for competency assessment.

This unit includes the process of organising and selecting the appropriate road marking 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 Performance Criteria
Elements define the essential outcomes of a unit of competency.

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 surface and set out

2.1 Area is cleared of dirt, debris and other contaminants

2.2 Location for line marking is identified and set out with control points to requirements or specifications

2.3 Straight lines and curves are spotted in preparation for marking

2.4 Pre-existing visible marks/lines are removed to specification where required

2.5 Marked location for lines is primed in readiness for road marking application
3 Prepare marking materials

3.1 Marking material is mixed and prepared in accordance with manufacturers’ and job specifications

3.2 Material is heated to manufacturers’ specifications to allow easy and consistent application

3.3 Marking material is transferred safely to applicator container

4 Apply road marking materials

4.1 Equipment relevant to the task is selected and prepared for operation

4.2 Equipment is used with the correct movement and pressure

4.3 Road marking material is applied to the surface providing an even coverage in accordance with job specifications

4.4 Defects in the thermo plastic material are identified and corrected

4.5 Equipment is maintained in accordance with manufacturers specifications

5 Measure work

5.1 Work is assessed to comply with job specification, recorded and reported

5.2 Amount of line marking completed is calculated and quantified

5.3 Non conforming work is identified and reported

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

- Thermo plastic material is to include but not be limited to application by spraying, screeding or extruding
- Marking of lines is to include but not be limited to transverse and longitudinal markings
- Types of transverse and longitudinal markings may include but not be limited to barrier lines (one direction and both directions), edge lines, arrows, shapes, symbols, lane lines (broken and unbroken), separation lines (broken and unbroken), continuity lines, turn lines, outline, stop lines, holding lines, stop and give way lines, pedestrian crosswalk lines, diagonal and chevron markings, numerals, parking areas and kerb markings
Unit scope (cont)

- Line marking may be applied to but not be limited to chip seal, asphalt or concrete
- Traffic control devices 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 are to only include dry weather by day or night
- Traffic conditions may include but not be limited to congested urban environments, low traffic rural areas, off-road untrafficked areas, buildings, parking sites and pedestrian areas
- Site locations may include but not be limited to roads, bridges, foot paths, sports courts and fields, car parks, fields, cycle paths, factories, airports, walking tracks and similar sealed surfaces

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 overhead services, 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/unalterable 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

Statutory/Regulatory Authorities

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

Tools and equipment

- Tools and equipment may include but not limited to long line machines, ride on road marking machines, walk behind pedestrian machines, airless or atomised spray equipment, filters, spray tips and maintenance tools

Materials

- Materials are to include but not limited to thermo plastics and primers

Communications

- 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

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 application of road markings using thermo plastic materials
  - Regulatory/legislative requirements pertaining to the application of road markings using thermo plastic materials
  - Manufacturers’ specifications and instructions
  - Organisation work specifications and requirements.
  - Instructions issued by authorised organisational or external personnel
  - Relevant Australian Standards
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
- Placement of new or replacement of existing thermo-plastic lines, using a ride on line marking machine, for a minimum of five kilometres of each of the following, to the specified tolerance:
  - Centre line (to include separation line, barrier line one direction and barrier line both directions)
  - Edge line

**OR**

- Placement of new or replacement of existing thermo-plastic lines, using a pedestrian line marking machine, for a minimum of 100 metres of each of the following, to the specified tolerance:
  - Centre line (to include separation line, barrier line one direction and barrier lines both directions)
  - Edge line

**OR**

- Placement of a minimum of 20m² thermo-plastic markings to the specified tolerance using a pedestrian line marking machine. This is to include any four of the following markings types; arrows, shapes, stop lines, holding lines, stop and give way line, pedestrian crosswalk lines, words, numerals and parking areas.
- 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
  - Thermo plastic road marking activities and techniques
  - Road markings
  - Thermo plastic 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
  - JSAs/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 thermo plastic road marking operations
  - hand and power tools, plant and equipment appropriate to thermo plastic road marking operations
  - specifications and work instructions

... End ...