



Australian Government

Department of Education, Employment and Workplace Relations

RIICBS311A Produce asphalt products

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers producing asphalt products in the civil construction industry. It includes planning and preparing, operating plant, carrying out operator maintenance, and cleaning up. Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Relevant information must be sourced prior to application of the unit.

Application of the Unit

This unit is appropriate for those working in an operational role at worksites within:

- Civil construction

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

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

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare	1.1. Access, interpret and apply compliance documentation relevant to the work activity 1.2. Obtain and confirm safety requirements from the site safety plan and organisational policies and procedures, and apply to the allotted task 1.3. Select plant, tools and equipment to carry out tasks consistent with the requirements of the job, check for serviceability and rectify or report any faults 1.4. Identify, confirm and apply environmental protection requirements from the project environmental management plan
2. Operate plant	2.1. Determine production requirements 2.2. Test aggregate and sand regularly as it arrives 2.3. Monitor cold feed bins to ensure sufficient raw material is maintained 2.4. Ensure proportion of material allocation is set to batch requirements 2.5. Select mix design to batch requirements 2.6. Heat and mix material to the correct temperature and tolerance 2.7. Store material ready for dispatch and loading 2.8. Monitor loading operations 2.9. Test mixed material regularly for bitumen content and grading
3. Carry out operator maintenance	3.1. Conduct fault finding inspections 3.2. Maintain equipment and mixing chamber to ensure good working order 3.3. Carry out routine operational servicing and lubrication tasks 3.4. Maintain equipment condition reports and records
4. Clean up	4.1. Clear work area and dispose of or recycle materials in accordance with project environmental management plan 4.2. Clean, check, maintain and store plant,

	tools and equipment
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Required Skills and Knowledge

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

Required skills

Specific skills are required to achieve the Performance Criteria of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes the ability to carry out the following, as required to produce asphalt products:

- apply legislative, organisation and site requirements and procedures for producing asphalt products
- organise work activities
- select and use relevant tools and equipment safely
- identify and report on hazards related to the worksite and work activity
- communicate effectively to receive and clarify work instructions

Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes knowledge of the following, as required to produce asphalt products:

- site and equipment safety requirements
- plant operations
- batching systems
- mix specifications (temperatures and tolerances)
- production requirements
- bituminous materials and their characteristics
- aggregate and sand properties and conformance
- additives
- processes for heating bitumen and controlling temperature
- testing procedures
- equipment types, characteristics, technical capabilities and limitations
- operational, maintenance and basic diagnostic procedures
- processes for the calculation of material requirements and application rates
- materials safety data sheets and materials handling methods
- project quality requirements
- civil construction terminology
- JSAs/safe work method statements

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competency in this unit must be relevant to worksite operations and satisfy all of the requirements of the performance criteria, required skills and knowledge and the range statement of this unit and include evidence of the following: • knowledge of the requirements, procedures and instructions for producing asphalt products • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of producing asphalt products • working with others to undertake and complete the production of asphalt products that meets all of the required outcomes • consistent timely production of asphalt products that safely, effectively and efficiently meets the required outcomes • completion of programming and planning of the mix specification for three separate mixes, with the temperature and mix produced within tolerance for 300 tonne of mix, without plant down time
Context of and specific resources for assessment	• This unit must be assessed in the context of the work environment. Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills. • Assessment of this competency requires typical resources normally used in a resources and infrastructure sector environment. Selection and use of resources for particular worksites may differ due to the site circumstances. • The assessment environment should not

	disadvantage the participant. For example, language, literacy and numeracy demands of assessment should not be greater than those required on the job. • Customisation of assessment and delivery environment to sensitively accommodate cultural diversity. • Aboriginal people and other people from a non English speaking background may have second language issues. • Where applicable, physical resources should include equipment modified for people with disabilities. Access must be provided to appropriate learning and/or assessment support when required.
Method of assessment	This unit may be assessed in a holistic way with other units of competency. The assessment strategy for this unit must verify required knowledge and skill and practical application using more than one of the following assessment methods: • written and/or oral assessment of the candidate's required knowledge • observed, documented and/or first hand testimonial evidence of the candidate's: • implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes • consistent achievement of required outcomes • first hand testimonial evidence of the candidate's: • working with others to undertake and complete the production of asphalt products
Guidance information for assessment	Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Relevant compliance documentation may include:	• legislative, organisational and site requirements and procedures • manufacturer's guidelines and specifications • Australian standards • Employment and workplace relations legislation • Equal Employment Opportunity and Disability Discrimination legislation • 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 production of asphalt products • regulatory/legislative requirements pertaining to the production of asphalt products • instructions issued by authorised organisational or external personnel • relevant Australian standards and Austroads • AAPA advisory notes and code of practice • quality requirements including dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction
Safety requirements may include:	• OHS requirements are to be in accordance with state or territory legislation and regulations, organisational safety policies and procedures, and project safety plan, including 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 including recognising and preventing hazards associated with moving

	machinery, flammable, toxic and dangerous materials, personnel, working in proximity to others, worksite visitors and the public • emergency procedures related to equipment operation including emergency shutdown and stopping, extinguishing equipment fires, organisational First Aid requirements and evacuation
Site may include:	• car parks • airport runways • container yards • hard stands • footpaths • bikeways • roadways
Plant may include:	• fixed • mobile plant
Tools and equipment may include:	• asphalt plant and loaders
Environmental protection requirements may include:	• organisational/project environmental management plan • waste management • water quality protection • noise • vibration • dust and clean-up management
Materials may include:	• aggregates • sand • various grades and types of bitumen • fly ash • additives • cutters • bitumen emulsions
Mix may include:	• cold mix (also known as pre-mix or SMK) is used for temporary patching of potholes, walkways, bike tracks and temporary pavements • hot mix is used for roads, car parks and other long term requirements • cold mix is usually produced at a lower temperature with cutter added to make the mix softer and extend usability

Test may include:	• monitoring bitumen content, grading and may include maximum theoretical density, bulk density, voids, stability and flow
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Unit Sector(s)

Bituminous Surfacing

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.