



Australian Government

Department of Education, Employment and Workplace Relations

RIICBS407A Apply the principles for the manufacture and delivery of hot mix asphalt

Release: 1

RIICBS407A Apply the principles for the manufacture and delivery of hot mix asphalt

Modification History

Not applicable.

Unit Descriptor

This unit covers the supervision of the manufacture and delivery of hot mix asphalt in the civil construction industry. It includes the requirements for ensuring that the planning, preparing, initiating, monitoring, adjusting and reporting of the manufacture and delivery of hot mix asphalt are carried out in accordance with the accepted industry principles.

Application of the Unit

This unit is appropriate for those working in a supervisory role or as a technical specialist, *to apply the principles for the manufacture and delivery of hot mix asphalt* 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. Ensure appropriate planning and preparation is carried out	1.1. Access, interpret and apply compliance documentation relevant to the work activity 1.2. Access, interpret and clarify the specific task information and requirements relevant to undertaking the manufacture and delivery of hot mix asphalt 1.3. Ensure a job plan is available which makes best use of the available resources and meets the manufacture and delivery requirements
2. Ensure appropriate initiation of manufacture and delivery	2.1. Confirm that the necessary resources are available for the safe, effective and efficient conduct of the tasks 2.2. Ensure clear and timely instructions are communicated to team members and others involved, for the safe, effective and efficient conduct of the manufacture and delivery
3. Oversee the execution of manufacture and delivery	3.1. Monitor the hot mix asphalt manufacture and delivery performance to ensure it achieves the required outcomes 3.2. Initiate adjustments to manufacturing and delivery practice or job plan to ensure safe execution of work and achievement of required outcomes 3.3. Ensure plant equipment and tools maintenance requirements are carried out and recorded
4. Report on the execution of manufacture and delivery	4.1. Complete and submit reports as required 4.2. Recommend changes to improve the safety, efficiency and effectiveness of the execution of the manufacture and delivery of hot mix asphalt

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 in this unit, particularly for the application in the various circumstances in which this unit may be applied. This includes the ability to carry out the following as required to apply the principles for the manufacture and delivery of hot mix asphalt:

- apply legislative, organisation and site requirements and procedures
- interpret project contract and specification requirements and procedures
- interpret project site soil and geological data
- identify soil and rock types
- interpret meteorological data
- identify drainage issues
- interpret material properties and test results, including compaction test results
- interpret project site geotechnical data
- interpret project site hydrological data
- interpret project engineering survey information
- interpret project plans and drawings
- interpret project specifications
- prepare for and conduct briefings, toolbox and site meeting
- prepare short messages
- prepare and present job reports
- prepare and maintain log books and diaries
- provide leadership
- apply performance monitoring skills
- apply supervisory skills
- develop workplace relationships
- develop individuals and the team
- apply inspection requirements and procedures
- select binders
- calculate quantities for the execution of the manufacture and delivery of hot mix asphalt, including:
 - volumes
 - tonnages
 - grades
 - percentages
 - resource consumption figures
- provide recommendations for the improvement of the safe, effective and efficient execution of the manufacture and delivery of hot mix asphalt

Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly its application in a variety of circumstances in which the unit may be used. This includes knowledge of the following, as required to apply the principles for the manufacture and delivery of hot mix asphalt:

- risk assessment and management requirement and procedures
- statutory compliance requirements and procedures
- occupational health and safety requirements and procedures
- environmental management requirements and procedures
- quality management requirements and procedures, including aggregates, binders and product
- work zone traffic management requirements and procedures
- contract management requirements and procedures
- communication requirements and procedures
- administrative requirements and procedures
- hot mix asphalt manufacturing and delivery plant and equipment capabilities and application
- plant, equipment and tools maintenance requirements and procedures
- hot mix delivery truck loading requirements and procedures
- operational techniques for the execution of the manufacture and delivery of hot mix asphalt
- hot mix asphalt raw materials and product handling, storage, moisture and temperature control requirements and procedures
- hot mix asphalt manufacturing and delivery resource requirements and procedures
- hot mix asphalt raw materials and product delivery requirements and procedures
- hot mix asphalt manufacturing sampling, testing and production monitoring methods
- activities scheduling requirements and procedures
- job plan drafting of and administration requirements and procedures
- reporting requirements and procedures
- workplace relationship requirements and procedures
- organisational, client and site operational requirements
- relationship between various areas of civil works
- team leadership techniques
- works planning techniques
- engineering survey principles
- mentoring techniques
- estimating principles
- road construction sequencing
- asphalt manufacture and delivery and related activities' terminology
- works planning techniques

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 the manufacture and delivery of hot mix asphalt • implementation of procedures and techniques for the safe, effective and efficient manufacture and delivery of hot mix asphalt • working with others to plan, prepare and conduct the manufacture and delivery of hot mix asphalt • provision of clear and timely instruction and supervision by the individual of those involved in the manufacture and delivery of hot mix asphalt • evidence of the consistent successful manufacture and delivery of hot mix asphalt
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. • Evidence for assessment is best gathered using the outcomes of products and processes in the workplace. • 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. • 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. • 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 procedures and techniques for the safe, effective and efficient achievement of the required outcomes • consistently achieving the required outcomes • first hand testimonial evidence of the candidate's: • working with others to plan, prepare and conduct the manufacture and delivery of hot mix asphalt • provision of clear and timely instruction and supervision by the individual of those involved in the manufacture and delivery of hot mix asphalt
Guidance information for	Consult the SkillsDMC User Guide for further

assessment	information on assessment including access and equity issues.
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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 • code of practice • Employment and workplace relations legislation • Equal Employment Opportunity and Disability Discrimination legislation
Specific task information and requirements may include:	• site geotechnical data, including: • rock types and characteristics • soil types and characteristics • site meteorological data, including: • rainfall • humidity • temperature • wind • known and potential site hazards, constraints and conditions • site cultural and heritage information • asphalt product specifications • sources of materials and their specifications • other organisations and contractors involved in the task or related tasks • materials and product sampling and testing requirements • coordination, timing and budgeting requirements
Manufacture of hot mix asphalt may include:	• fixed and mobile batch plants • fixed and mobile drum mixing plants • dense graded asphalt (DGA) • stone mastic asphalt (SMA) • open graded asphalt (OGA) • fine gap graded (FGG)

	• bitumen and modified binders
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Delivery of hot mix asphalt may include:	• site preparation • site set out • plant set up • delivery and product vehicle access and control • raw materials receipt, acceptance and storage • use of recycled asphalt • raw materials loading into the plant • binder and product temperature control • product batching or proportioning and mixing • process control • product loading and despatch • use of release agents in delivery trucks • pollution control methods • sediment control methods
Job plan is to include:	• human resource requirements • plant and machinery requirements • construction materials requirements • sub-contractor support requirements • waste disposal requirements • coordination requirements • activity scheduling • materials delivery scheduling • risk assessment and management requirements • occupational health and safety requirements • quality management requirements, including materials and product sampling and testing requirements • plant site traffic management requirements • environmental requirements • task monitoring requirements • task performance monitoring requirements • communication requirements • reporting requirements
Resources are to include:	• labour • plant, equipment and tools • materials for the manufacture of asphalt • highway haulage vehicles • sub-contractor services
Instructions are to include:	• briefings and handovers • work orders • toolbox meetings

	• site meetings
Team members may include:	• other members of the organisation's management team • members of the team directly involved in the task • suppliers representatives • sub-contractors representatives • supervisors or managers of other organisations who are involved in related tasks
Monitor is to include:	• ongoing risk assessment • sampling and testing • process control information • observation and recording • general supervision
Required outcomes may include:	• asphalt mix specifications requirements • coordination requirements • activity scheduling requirements • unit cost requirements • overall task cost requirements • waste management requirements
Initiate is to include:	• written communication • oral communication

Unit Sector(s)

Bituminous Surfacing

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.