



Australian Government

Department of Education, Employment and Workplace Relations

PMC552065B Prepare asphalt

Revision Number: 1

PMC552065B Prepare asphalt

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the batching of asphalt using either a batch or continuous plant. It involves selecting, drying and blending of the correct aggregates and blending with bitumen to make the desired grade of asphalt.
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Application of the Unit

Application of the unit	<p>This unit of competency applies to operators who are responsible for mixing asphalt using a range of pug and drum mixers and for a range of purposes. It is intended to apply to batching plants as used by the asphalt industry and may cover batch, continuous, fixed and mobile plants.</p> <p>This unit covers both the use of natural bitumen such as is obtained from oil refineries and synthetic bitumen used for coloured asphalt. It includes the operation of all ancillary equipment and the operation of plant using PLCs where appropriate.</p> <p>This competency is typically performed by operators working either independently or as part of a work team.</p>
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

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

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

ELEMENT	PERFORMANCE CRITERIA
1. Determine mix requirements	1.1. Check work schedule/job specification/job card 1.2. Select correct type and quantity of aggregates and other materials 1.3. Meet all special requirements and specifications 1.4. Identify any material handling problems and take action in accordance with standard procedures 1.5. Update material records as appropriate
2. Mix asphalt	2.1. Check setup of equipment as required by specifications and standard procedures 2.2. Set/adjust plant conditions as required for required product 2.3. Feed aggregate to dryer at required rates 2.4. Prepare bitumen and other materials and add to mixer as required by specifications and standard procedures 2.5. Check that materials prepared match requirements 2.6. Use ancillary equipment as required according to standard procedures 2.7. Mix to obtain required results 2.8. Discharge product to asphalt storage/delivery
3. Monitor asphalt process	3.1. Check and adjust settings as required 3.2. Make routine checks and recognise developing problems 3.3. Recognise equipment in need of maintenance/repair 3.4. Take sample and interpret test results as required 3.5. Take appropriate action to ensure continuing quality production according to standard procedures 3.6. Complete all required records
4. Maintain batching plant and area	4.1. Keep area and equipment clean and in good order 4.2. Unload and shut down equipment as required 4.3. Respond to routine faults according to enterprise procedures 4.4. Report non-routine faults according to enterprise procedures
5. Rectify routine problems	5.1. Identify the range of faults that can occur during the operation 5.2. Determine and rectify fault causes in accordance with procedures/work instructions

ELEMENT	PERFORMANCE CRITERIA
	5.3. Identify and rectify equipment failure causes in accordance with procedures/work instructions 5.4. Ensure appropriate records and log books of equipment operations are maintained to meet procedures/work instructions 5.5. Identify non-routine problems and report to designated person
6. Control hazards	6.1. Identify hazards from the job to be done 6.2. Identify other hazards in the work area 6.3. Assess the risks arising from those hazards 6.4. Implement measures to control those risks in line with procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

Required skills include:

- recognising potential problems and taking appropriate action
- implementing the enterprise's standard procedures and work instructions and relevant regulatory requirements within appropriate time constraints and in a manner relevant to the operation of the equipment
- reading and numeracy to interpret workplace documents and technical information

Required knowledge

Required knowledge includes:

- principles of drying of aggregates
- principles of mixing these products
- impact of variations in raw materials on final product
- impact of mixing on final product
- enterprise production schedules
- distinguish between causes of faults such as:
 - raw material
 - equipment
 - mixing time/technique

Evidence Guide

EVIDENCE GUIDE	
<p>The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p>	
Overview of assessment	<p>The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency.</p>
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>It is essential that the equipment be understood and that the importance of critical material properties and mixing variables is known. Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action.</p> <p>Consistent performance should be demonstrated. In particular look to see that:</p> <ul style="list-style-type: none"> • product is produced on time and in specification • upstream and downstream communication is timely and effective • problems are anticipated and appropriate action is taken (i.e. problem fixed or reported). <p>Competence must be demonstrated in the operation of all ancillary equipment to the level required for this unit of competency.</p>
Context of and specific resources for assessment	<p>Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations.</p> <p>Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.</p> <p>Simulation or case studies/scenarios may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include 'walk-throughs' of the relevant competency components. A bank of scenarios/case studies/what ifs and questions will be required to probe the reasoning behind observable actions.</p>
Method of assessment	<p>This unit may be assessed in conjunction with:</p> <ul style="list-style-type: none"> • PMC561080A Organise self

EVIDENCE GUIDE	
	<ul style="list-style-type: none">• MSAPMSUP106A Work in a team. <p>Individual enterprises may choose to add prerequisites and co-requisites relevant to their processes. In remote operations, this person may also need scheduling and other materials ordering and handling competencies.</p>
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the language and literacy capacity of the candidate and the work being performed.

Range Statement

RANGE STATEMENT	
<p>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.</p>	
Procedures	All operations are performed in accordance with standard procedures and work instructions
Aggregate	<p>Aggregate may include:</p> <ul style="list-style-type: none"> • the normal range of gravels and sand as well as recycled asphalt pavement (RAP) <p>It may, or may not, include the addition of special aggregates such as slag, carborundum, lime or crushed garnets</p>
Typical problems	<p>Typical problems may include:</p> <ul style="list-style-type: none"> • equipment malfunction • raw material specifications • mixing tolerance • uniform dispersion of minor ingredients/additives • mixing to special requirements • matching mixes produced with production requirements • adjusting mix formula to compensate for variations in raw materials (e.g. aggregate moisture content)

Unit Sector(s)

Unit sector	Operational/technical
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Competency field

Competency field	
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Co-requisite units

Co-requisite units		