



Australian Government

Department of Education, Employment and Workplace Relations

PMC552060C Batch mix concrete

Revision Number: 1

PMC552060C Batch mix concrete

Modification History

Not applicable.

Unit Descriptor

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| Unit descriptor | This unit of competency covers the selection of materials, batching and loading of different grades and amounts of concrete to meet production needs and the required standards. |
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Application of the Unit

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| Application of the unit | <p>This unit of competency applies to operators of concrete batching plants in the pre-mixed and/or manufactured concrete products industries. It includes both wet and dry batching.</p> <p>It is NOT intended to apply to the use of manually charged/discharged concrete mixers such as might be used by builders on sites. <i>PMC551003B Operate equipment applies to those mixers.</i></p> <p>This unit of competency includes the operation of the batching plant using PLCs where applicable and of all equipment which is ancillary to the operation of the batching plant. The operation of equipment such as front end loaders, conveyors and hoppers are covered by other units (see <i>PMC562070B Move materials, PMC562071C Operate bulk materials handling equipment</i>).</p> <p>In a typical scenario an operator runs the concrete batching equipment to meet product specifications and delivery requirements and/or production schedules. The operator is able to read and interpret these requirements and make necessary adjustments to meet the specifications.</p> <p>This competency is typically performed by operators working either independently or as part of a team.</p> |
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

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| Prerequisite units | | |
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Employability Skills Information

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

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| <p>Elements describe the essential outcomes of a unit of competency.</p> | <p>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.</p> |
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Elements and Performance Criteria

| ELEMENT | PERFORMANCE CRITERIA |
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| 1. Determine mix requirements | 1.1. Identify job requirements 1.2. Select the correct type and quantity of materials as required 1.3. Meet special requirements and specifications 1.4. Identify any material handling problems and take the appropriate action 1.5. Update material records as required |
| 2. Batch mix raw materials | 2.1. Set up and operate batching and/or mixing equipment to specifications and procedures 2.2. Batch materials as required by specifications and procedures 2.3. Check that materials prepared match requirements 2.4. Use ancillary equipment as required according to procedures 2.5. Discharge batched concrete into delivery trucks/mixers |
| 3. Monitor batch mixing 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 samples and interpret test results as required 3.5. Ensure the production process and product complies with the appropriate quality procedures 3.6. Complete all required records |
| 4. Maintain batch mixing plant and area | 4.1. Keep the area and equipment clean and in good order 4.2. Shut down equipment as required 4.3. Complete maintenance checklists as required 4.4. Respond to routine faults according to procedures 4.5. Report non-routine faults according to 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 5.3. Identify and rectify equipment failure causes in accordance with procedures 5.4. Ensure appropriate records and log books of equipment operations are maintained to meet |

| ELEMENT | PERFORMANCE CRITERIA |
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| | procedures 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 conditions which will lead to out of specification product
- implementing the organisation's procedures and relevant regulatory requirements within time constraints and in a manner relevant to the operation of the equipment
- conveying information relevant to the operation clearly and effectively
- supervising delivery drivers as required by procedures
- numeracy and literacy to interpret workplace documents and technical information

Required knowledge

Required knowledge includes:

- understanding of the equipment sufficient to operate it, recognise potential problems and to take appropriate action
- organisation's procedures and relevant regulatory requirements, such as:
 - principles of operation of batching and mixing equipment
 - principles of batching and mixing these products
 - impact of variations in raw materials on the final product
 - impact of mixing on final product
 - organisation's production and/or delivery schedules
- causes of faults such as those precipitated by:
 - raw material inaccuracies
 - equipment failures
 - mixing time/technique variations

Evidence Guide

| EVIDENCE GUIDE | |
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| <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> | |
| <p>Overview of assessment</p> | <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> |
| <p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p> | <p>Competence must be demonstrated in the ability to recognise situations requiring action and then in implementing appropriate corrective action. Consistent performance should be demonstrated. In particular look to see that:</p> <ul style="list-style-type: none"> • batches are 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> |
| <p>Context of and specific resources for assessment</p> | <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. Simulations may also include the use of case studies and scenarios. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.</p> |
| <p>Method of assessment</p> | <p>This unit may be assessed in conjunction with:</p> <ul style="list-style-type: none"> • PMC561080B Organise self • MSAPMSUP106A Work in a team. |

| EVIDENCE GUIDE | |
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| | 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 material ordering and handling competencies. |
| 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 | |
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| <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 |
| Job requirements | <p>Job requirements may be determined from:</p> <ul style="list-style-type: none"> • work schedule • job specification • job card • batch card • computerised system • other |
| Sampling and testing | <p>Sampling and testing may be required for:</p> <ul style="list-style-type: none"> • moisture content • particle size • other |
| Variations | <p>Variations may include:</p> <ul style="list-style-type: none"> • nature and type of plant configuration • nature and type of material or product to be batched/mixed • conditions under which the product is to be employed including weather conditions |
| Typical problems | <p>Typical problems include:</p> <ul style="list-style-type: none"> • equipment malfunction • raw material specifications • mixing tolerance • uniform dispersion of minor ingredients/additives • mixing to colour/other special requirements • matching mixes produced with production requirements • adjusting mix formula to compensate for variations in raw materials (e.g. sand moisture) |

| RANGE STATEMENT | |
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| Occupational health and safety (OHS) | All operations are subject to stringent OHS requirements and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and OHS requirements, the OHS requirements take precedence |

Unit Sector(s)

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| Unit sector | Operational/technical |
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Competency field

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| Competency field | |
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Co-requisite units

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| Co-requisite units | | |
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