



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **PMC552050C Schedule, cut and bend reinforcement**

**Revision Number: 1**

## PMC552050C Schedule, cut and bend reinforcement

### Modification History

Not applicable.

### Unit Descriptor

<b>Unit descriptor</b>	This unit of competency covers the interpretation of plans (steel drawings) and the cutting, bending and testing of reinforcing steel for manufactured concrete products. It involves determining job requirements, choosing the necessary tools and materials and ensuring testing is conducted effectively.
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### Application of the Unit

<b>Application of the unit</b>	<p>This unit of competency applies to operators who are responsible for preparing reinforcement for use in a variety of manufactured concrete products.</p> <p>This unit includes:</p> <ul style="list-style-type: none"> <li>• bars and mesh</li> <li>• bars and mesh prepared by reinforcement supplier</li> <li>• validation of test certificates</li> <li>• cropping and guillotining of bar and mesh</li> <li>• bending and other preparation of reinforcement ready for assembly</li> <li>• using automatic and semi-automatic reinforcement machines</li> <li>• the operation of all ancillary equipment.</li> </ul> <p>This competency is typically performed by operators working either independently or as part of a work team.</p> <p>Individual enterprises may choose to add prerequisites and co-requisites relevant to their processes.</p>
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## Licensing/Regulatory Information

Not applicable.

## Pre-Requisites

<b>Prerequisite units</b>		

## Employability Skills Information

<b>Employability skills</b>	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. Interpret plan/steel drawing/specifications	1.1. Recognise steel sizes and types required 1.2. Interpret steel dimensions 1.3. Check cover to steel is adequate and report if not 1.4. Determine steel lengths allowing for bends and bar thickness 1.5. Follow instructions/requirements for cage assembly
2. Prepare materials and equipment	2.1. Determine requirements prior to fabricating 2.2. Read job specification/plan and determine equipment and material requirements 2.3. Check availability of bars and mesh 2.4. Set up templates and equipment in compliance with plan/specifications and work instructions 2.5. Cut, bend and tag reinforcement
3. Organise quality testing of reinforcement	3.1. Arrange for samples of work in progress to be verification tested if specified 3.2. Check reinforcement using go no-go gauges, dimension tolerance, cosmetics and level of standards specification 3.3. Implement test requirements in accordance with standard operating procedures and any legislative or regulatory requirements
4. Rectify routine problems	4.1. Identify the range of faults that can occur during the operation 4.2. Determine and rectify fault causes in accordance with procedures/work instructions 4.3. Identify and rectify equipment failure causes in accordance with procedures/work instructions 4.4. Make sure appropriate records and log books of equipment operations are maintained to meet procedures/work instructions 4.5. Identify non-routine problems and report to designated person
5. Control hazards	5.1. Identify hazards from the job to be done 5.2. Identify other hazards in the work area 5.3. Assess the risks arising from those hazards 5.4. 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 problems and taking appropriate action
- implementing enterprise's standard procedures and work instructions and relevant regulatory requirements within appropriate time constraints and in a manner relevant to the fabrication of reinforcement
- reading and numeracy to interpret workplace documents and technical information

#### Required knowledge

Required knowledge includes:

- relevant quality tests
- interpret plans (steel drawings, reinforcement schedules) and specifications
- reinforcement design drawings
- reinforcement schedules
- reinforcement tags
- make necessary calculations from 'steel drawings'
- choose appropriate bending pin and bending machine setup
- predict final shape/dimension based on bar size/type, bend radius and anchorage requirement
- underlying causes of faults such as precipitated by:
  - reinforcing
  - design
  - fabrication
  - equipment

## Evidence Guide

<b>EVIDENCE GUIDE</b>	
<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><b>Overview of assessment</b></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><b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b></p>	<p>It is essential that the fabrication process be understood and that the importance of critical material properties, specifications and dimensions 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"> <li>• allowance is made for fittings and lifting lugs to be correctly positioned</li> <li>• steel coverage is adequate</li> <li>• dimensions/dimensional tolerance are correct</li> <li>• appropriate grade of steel is used.</li> </ul> <p>Competence must be demonstrated in the operation of all ancillary equipment to the level required for this unit of competency.</p>
<p><b>Context of and specific resources for assessment</b></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. A bank of scenarios/case studies/what ifs and questions will be required to probe the reasoning behind observable actions.</p>
<p><b>Method of assessment</b></p>	<p>Individual enterprises may choose to add prerequisites and co-requisites relevant to their processes.</p>

**EVIDENCE GUIDE****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

<b>RANGE STATEMENT</b>	
<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>	
<b>Procedures</b>	All operations are performed in accordance with standard procedures and work instructions
<b>Typical problems</b>	<p>Typical problems may include:</p> <ul style="list-style-type: none"> <li>• dimensions and positions of fittings and lugs as they affect reinforcement dimension and shape</li> <li>• adequate cover of steel</li> <li>• predicting final size and shape of bent bar reinforcement</li> <li>• rectifying design and scheduling errors that may not be obvious until items are assembled</li> </ul>
<b>Occupational health and safety (OHS)</b>	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)

<b>Unit sector</b>	Operational/technical
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## Competency field

<b>Competency field</b>	
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## Co-requisite units

<b>Co-requisite units</b>		