Australian Government

Department of Education, Employment and Workplace Relations

PMC552056B Assemble, fabricate and place reinforcement

Revision Number: 1

PMC552056B Assemble, fabricate and place reinforcement

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the interpretation of plans (steel drawings), the fabrication of reinforcement from pre-cut and bent steel and the placement of reinforcing steel cages and assemblies for manufactured concrete products.

Application of the Unit

Application of the unit	This unit of competency applies to operators who are responsible for producing reinforced steel, cages and assemblies for insertion in concrete products. This unit of competency includes: • bars and mesh • bars and mesh prepared by reinforcement supplier • welding of reinforcement cages • wire tying of reinforcement cages • using automatic and semi-automatic reinforcement machines • the operation of all ancillary equipment. This competency is typically performed by an experienced operator working either independently or as part of a work team.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for fabrication	1.1. Check quantities, type, size and shape of reinforcement supplied against drawings, tags and schedules 1.2. Prepare jigs and/or other assembly aids if applicable
2. Assemble/fabricate reinforcement	2.1. Assemble reinforcement using appropriate fixing method 2.2. Check final dimensions are to specification 2.3. Insert lifting devices, lugs, fittings, bar chairs and nibs according to standard operating procedures 2.4. Ensure minimum lap sizes are observed where applicable 2.5. Complete cage to enable lifting (if assembled outside the mould) 2.6. Report any non-compliance 2.7. Follow all occupational health and safety (OHS) procedures and work instructions
3. Rectify routine problems	3.1. Identify the range of faults that can occur during the operation 3.2. Determine and rectify fault causes in accordance with procedures/work instructions 3.3. Identify and rectify equipment failure causes in accordance with procedures/work instructions 3.4. Ensure appropriate records and log books of equipment operations are maintained to meet procedures/work instructions 3.5. Identify non-routine problems and report to designated person
4. Control hazards	4.1. Identify hazards from the job to be done 4.2. Identify other hazards in the work area 4.3. Assess the risks arising from those hazards 4.4. 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
- using appropriate fixing equipment such as tie wires and/or welding
- reading and numeracy to interpret workplace documents and technical information

Required knowledge

Required knowledge includes:

- relevant quality tests
- interpretation of plans, reinforcement designs, schedules, tags and specifications
- predicting final shape/dimension based on bar size/type and bend radius
- reinforcing materials
- design factors
- fabrication methodologies
- equipment needs and operations

Evidence Guide

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	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.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	It is essential that the reinforcement fabrication and placement process be understood and that the importance of critical material properties and specifications is known. Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. Consistent performance should be demonstrated. In particular look to see that: • fittings and lifting lugs are correctly positioned • steel coverage is adequate • dimensions/dimensional tolerance is correct • appropriate grade of steel is used • minimum lap sizes are observed where bar and/or fabric must be lapped • reinforcement is fixed securely by tying or tack welding to prevent movement during casting. Competence must be demonstrated in the operation of all ancillary equipment to the level required for this unit of competency.
Context of and specific resources for assessment	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. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation. 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

EVIDENCE GUIDE	
	the reasoning behind observable actions.
Method of assessment	Individual enterprises may choose to add prerequisites and co-requisites relevant to their processes.
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	
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.	
Procedures	All operations are performed in accordance with standard procedures and work instructions
Typical problems	Typical problems may include: • dimensions and positions of fittings and lugs • incorrect cover to steel • incorrect size and shape of completed reinforcement • inadequate tying of assembled reinforcement • undercutting, which can burn part of the steel away • cropping bar inside a mould which can result in small off-cuts of bar falling to the bottom of the mould • assembling welded cages inside a steel mould which may produce welding spatter on the mould
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)

Unit sector	Operational/technical

Competency field

Competency field	

Co-requisite units

Co-requisite units		