Australian Government

Department of Education, Employment and Workplace Relations

CPCCSF2004A Place and fix reinforcement materials

Release: 1

CPCCSF2004A Place and fix reinforcement materials

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit of competency specifies the outcomes required to place and fix reinforcement for concrete work as part of construction processes.

It includes planning and preparation for the work, final preparation for placement, placing and fixing reinforcement, checking the reinforcement and completing clean-up activities.

Application of the Unit

Application of the unit

This unit supports the attainment of skills and knowledge to place and fix reinforcement materials for a construction project, which includes working with others and as a member of a team.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units

CPCCOHS2001A	Apply OHS requirements, policies and procedures in the construction industry

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. Plan and prepare.	1.1. Work instructions, including plans, specifications, ***quality requirements*** and operational details are obtained from relevant ***information***, confirmed and applied to the ***scope of work*** performed. 1.2. ***Safety*** (***OHS***) requirements are followed in accordance with safety plans and policies. 1.3. Signage and barricade requirements are identified and implemented. 1.4. Plant, ***tools and equipment*** are selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported prior to commencement. 1.5. Stock of ***reinforcement materials*** is checked for correct type, quality and quantities against reinforcement schedule and details in plans/specifications. 1.6. ***Environmental requirements*** are identified for the project in accordance with environmental plans and ***statutory and legislative authority*** obligations and applied.
2. Prepare for reinforcement placement.	2.1. Formwork is checked for completion and conformity to receive reinforcement. 2.2. Reinforcement bars are cut and bent to required set out and plans and specifications. 2.3. Bars are tied to designed configuration from plans and specifications. 2.4. Reinforcement sheets are cut to required sizes. 2.5. Stiffening rods are attached to panels as required to facilitate handling processes. 2.6. Bar chairs and spacers are located to requirements of reinforcement schedule and plans and specifications.
3. Place and fix reinforcement.	3.1. Fabric reinforcement sheets are placed into position in accordance with engineer's drawings and specifications. 3.2. Reinforcement bars are located and positioned in accordance with engineer's drawings and specifications. 3.3. Reinforcement is located and placed using bar chairs, ligatures and spacers according to engineer's drawings and specifications. 3.4. Reinforcement material is supported and secured

ELEMENT	PERFORMANCE CRITERIA
	into position in accordance with engineer's drawings and specifications. 3.5. Cast-in items are secured to reinforcement in accordance with engineer's drawings and specifications. 3.6. Ends of protruding reinforcement material are covered and protected in accordance with plans and specifications.
4. Check reinforcement prior to concrete pour.	4.1. Location and position of reinforcement and fixing ties to reinforcement are checked for accuracy. 4.2. Depth of coverage, clearance, spacing and overlap of reinforcement material are checked in accordance with engineer's drawings and job specification.
5. Clean up.	5.1. Work area is cleared and materials disposed of, reused or recycled in accordance with legislation, regulations, codes of practice and job specification. 5.2. Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturer recommendations and standard work practices.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

Required skills for this unit are:

- communication skills to:
  - determine requirements
  - follow instructions
  - read and interpret:
    - documentation from a variety of sources
    - drawings and specifications
  - report faults
  - use language and concepts appropriate to cultural differences
  - use and interpret non-verbal communication, such as hand signals
- identifying and accurately reporting to appropriate personnel any faults in tools,

REQUIRED SKILLS AND KNOWLEDGE

equipment or materials
- numeracy skills to apply calculations
- organisational skills, including the ability to plan and set out work
- teamwork skills to work with others to action tasks and relate to people from a range of cultural and ethnic backgrounds and with varying physical and mental abilities
- technological skills to:
  - use a range of mobile technology, such as two-way radio and mobile phones
  - voice and hand signals to access and understand site-specific instructions.

Required knowledge

Required knowledge for this unit is:

- construction and steelfixing terminology
- job safety analysis (JSA) and safe work method statements
- job specifications related to the layout of reinforcement materials
- material safety data sheets (MSDS)
- materials storage and environmentally friendly waste management
- plans, drawings and specifications
- processes for the calculation of material requirements
- quality requirements
- reinforcement materials placement and fixing techniques
- types, properties, uses and limitations of reinforcement materials
- workplace and equipment safety requirements.

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

This unit of competency could be assessed in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques fully replicate construction workplace conditions, materials, activities, responsibilities and procedures.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

A person who demonstrates competency in this unit must be able to provide evidence of the ability to:

- locate, interpret and apply of relevant information, standards and specifications
- comply with site safety plan and OHS legislation, regulations and codes of practice applicable to workplace operations
- comply with organisational policies and procedures, including quality requirements
- safely and effectively use tools, plant and equipment
- communicate and work effectively and safely with others
- place and fix reinforcement materials to specification on a minimum of three different jobs and involving deformed bars, rods and mesh sheets.

Context of and specific resources for assessment

This competency is to be assessed using standard and authorised work practices, safety requirements and environmental constraints.

Assessment of essential underpinning knowledge will usually be conducted in an off-site context.

Assessment is to comply with relevant regulatory or Australian standards' requirements.

Resource implications for assessment include:

- an induction procedure and requirement
- realistic tasks or simulated tasks covering the mandatory task requirements

EVIDENCE GUIDE

- relevant specifications and work instructions
- tools and equipment appropriate to applying safe work practices
- support materials appropriate to activity
- workplace instructions relating to safe work practices and addressing hazards and emergencies
- material safety data sheets
- research resources, including industry related systems information.

Reasonable adjustments for people with disabilities must be made to assessment processes where required. This could include access to modified equipment and other physical resources, and the provision of appropriate assessment support.

Method of assessment

Assessment methods must:

- satisfy the endorsed Assessment Guidelines of the Construction, Plumbing and Services Training Package
- include direct observation of tasks in real or simulated work conditions, with questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application
- reinforce the integration of employability skills with workplace tasks and job roles
- confirm that competency is verified and able to be transferred to other circumstances and environments.

Validity and sufficiency of evidence requires that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice, with a decision on competency only taken at the point when the assessor has complete

EVIDENCE GUIDE

	confidence in the person's demonstrated ability and applied knowledge • all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence. Assessment processes and techniques should as far as is practical take into account the language, literacy and numeracy capacity of the candidate in relation to the competency being assessed. Supplementary evidence of competency may be obtained from relevant authenticated documentation from third parties, such as existing supervisors, team leaders or specialist training staff.

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.

Quality requirements include relevant regulations, including:	• Australian standards • internal company quality policy and standards • manufacturer specifications • workplace operations and procedures.
Information includes:	• diagrams or sketches • instructions issued by authorised organisational or external personnel • manufacturer specifications and instructions, where specified • MSDS • memos • regulatory and legislative requirements pertaining to the placement and fixing of reinforcement materials

RANGE STATEMENT

	• relevant Australian standards • safe work procedures relating to the placement and fixing of reinforcement materials • signage • verbal, written and graphical instructions • work bulletins • work schedules, plans and specifications.
Scope of work:	• steelfixing may involve reinforcing concrete for foundations, pits and slabs, columns, walls, stairs, plinths, kerbs, gutters, pathways and hard standings.

Safety (***OHS***) is to be in accordance with state and territory legislation and regulations and project safety plan and may include:	• emergency procedures, including extinguishing fires, organisational first aid requirements and evacuation
	• handling activities that may require the assistance of others or the use of manual or mechanical lifting devices where size, weight or other issues, such as a disability are a factor
	• hazard control
	• hazardous materials and substances, including cement and curing agents
	• organisational first aid
	• PPE prescribed under legislation, regulations and workplace policies and practices
	• safe operating procedures, including the conduct of operational risk assessment and treatments associated with:
	  • cutting, grinding and welding equipment
	  • lighting
	  • power equipment
	  • power leads and sources
	  • trip hazards
	  • work site visitors and the public
	  • working in confined spaces
	  • working in proximity to others
	  • working with metals under stress
	• use of firefighting equipment
	• use of tools and equipment
	• workplace environmental requirements and safety.

Tools and equipment:	• include:

RANGE STATEMENT

	• bolt cutters • measuring tapes and rules • mesh guillotines • reinforcement benders • tie wire reels • wire nippers • may include: • general hand and power tools • manual metal arc welding (MMAW) machines • oxy-acetylene setting and cutting attachments.
Reinforcement materials:	• include: • bar chairs • deformed bars • ligatures • mesh sheets of deformed bars • mesh sheets of plain bars • plain rods • spacer/spreader assemblies • wire ties • may include: • pipe sections • scaffolding components • structural steel sections.
Environmental requirements include:	• clean-up management • dust and noise • stormwater protection • waste management.
Statutory and regulatory authorities include:	• federal, state and local authorities administering the applicable Acts, regulations and codes of practice.

Unit Sector(s)

Unit sector Construction

Functional area

Functional area