



Australian Government

Department of Education, Employment and Workplace Relations

RIICCM204A Place and fix reinforcement materials

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers the placement and fixing of reinforcement materials in the civil construction industry. It includes planning and preparing, preparing for reinforcement placement, placing and fixing reinforcement, checking reinforcement prior to concrete pour, and cleaning up. Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Relevant information must be sourced prior to application of the unit.

Application of the Unit

This unit is appropriate for those working in an operational role at worksites within:

- Civil construction

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Not applicable.

Employability Skills Information

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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare	1.1. Access, interpret and apply compliance documentation relevant to the work activity 1.2. Obtain and confirm safety requirements from the site safety plan and organisational policies and procedures, and apply to the allotted task 1.3. Identify, obtain and implement signage/barricade requirements from the project traffic management plan 1.4. Select plant, tools and equipment to carry out tasks consistent with the requirements of the job, check for serviceability and rectify or report any faults 1.5. Check stock of reinforcement materials for correct type and quantity against reinforcement schedule and details in plans/specifications 1.6. Identify environmental protection requirements from the project environmental management plan, and confirm and apply to the allotted
2. Prepare for reinforcement placement	2.1. Check formwork for completion and conformity to receive reinforcement 2.2. Cut and bend reinforcement bars to required set out and plans/specifications 2.3. Tie bars to designed configuration 2.4. Cut reinforcement sheets to required sizes 2.5. Attach stiffening rods to panels as required to facilitate handling processes 2.6. Locate bar chairs/spacers to requirements of reinforcement schedule and plans/specifications
3. Place and fix reinforcement	3.1. Place fabric reinforcement sheets into position in accordance with engineer's drawings and specifications 3.2. Locate and position reinforcement bars 3.3. Locate and place reinforcement using bar chairs, ligatures and spacers 3.4. Support and secure reinforcement material is supported and secured into position

	3.5. Secure cast-in items to reinforcement 3.6. Cover and protect ends of protruding reinforcement material
4. Check reinforcement prior to concrete pour	4.1. Check location and position of reinforcement and fixing ties to reinforcement for accuracy 4.2. Check depth of coverage, clearance, spacing and overlap of reinforcement material in accordance with engineer's drawings/job specifications
5. Clean up	5.1. Clear work area and dispose of or recycle materials in accordance with project environmental management plan 5.2. Clean, check, maintain and store plant, tools and equipment

Required Skills and Knowledge

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

Required skills

Specific skills are required to achieve the Performance Criteria of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes the ability to carry out the following, as required to place and fix reinforcement materials:

- apply legislative, organisation and site requirements and procedures for placing and fixing reinforcement materials
- organise work activities
- select and use relevant tools and equipment safely
- identify and report on hazards related to the worksite and work activity
- communicate effectively to receive and clarify work instructions
- read engineering drawings

Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes knowledge of the following, as required to place and fix reinforcement materials:

- steel reinforcement characteristics
- concrete characteristics and properties
- concreting principles
- structural technology
- formwork
- equipment types, characteristics, technical capabilities and limitations
- operational, maintenance and basic diagnostic procedures
- site and equipment safety requirements
- site isolation and traffic control responsibilities and authorities
- materials safety data sheets and materials handling methods
- project quality requirements
- civil construction terminology
- JSAs/safe work method statement

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	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competency in this unit must be relevant to worksite operations and satisfy all of the requirements of the performance criteria, required skills and knowledge and the range statement of this unit and include evidence of the following: • knowledge of the requirements, procedures and instructions for placing and fixing reinforcement materials • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of the placing and fixing of reinforcement materials • working with others to undertake and complete the placing and fixing reinforcement materials in a way that meets all of the required outcomes • consistent timely completion of the placing and fixing of reinforcement materials that safely, effectively and efficiently meets the required outcomes • the placement and fixing of 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 unit must be assessed in the context of the work environment. Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills. • Assessment of this competency requires typical resources normally used in a resources and infrastructure sector environment. Selection and use of resources for particular worksites

	may differ due to the site circumstances. • The assessment environment should not disadvantage the participant. For example, language, literacy and numeracy demands of assessment should not be greater than those required on the job. • Customisation of assessment and delivery environment to sensitively accommodate cultural diversity. • Aboriginal people and other people from a non English speaking background may have second language issues. • Where applicable, physical resources should include equipment modified for people with disabilities. Access must be provided to appropriate learning and/or assessment support when required.
Method of assessment	This unit may be assessed in a holistic way with other units of competency. The assessment strategy for this unit must verify required knowledge and skill and practical application using more than one of the following assessment methods: • written and/or oral assessment of the candidate's required knowledge • observed, documented and/or first hand testimonial evidence of the candidate's: • implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes • consistent achievement of required outcomes • first hand testimonial evidence of the candidate's: • working with others to undertake and complete the placing and fixing of reinforcement materials
Guidance information for assessment	Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.

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.

Relevant compliance documentation may include:	• legislative, organisational and site requirements and procedures • manufacturer's guidelines and specifications • Australian standards • Employment and workplace relations legislation • Equal Employment Opportunity and Disability Discrimination legislation
Safety requirements may include:	• OHS requirements in accordance with state or territory legislation and regulations, organisational safety policies and procedures, and project safety plan including: protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of First Aid equipment, hazard control and hazardous materials and substances • safe operating procedures including recognising and preventing hazards associated with high voltage power lines, uneven/unstable terrain, trees, overhead service lines, bridges, surrounding buildings, obstructions, structures, facilities, dangerous materials, recently filled trenches, other machines, personnel, traffic control, working at heights, working in proximity to others, worksite visitors and the public • safe parking practices including ensuring access ways are clear, equipment/machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement • recognising hazards and risks including uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials

	• emergency procedures related to equipment operation including emergency shutdown and stopping, extinguishing equipment fires, organisational First Aid requirements and evacuation
Site may include:	• steelfixing involving reinforcing concrete for: • foundations • pits • slabs • columns • walls • stairs • plinths • kerbs • gutters • pathways • hard standings
Signage may include:	• escort vehicle • highway traffic signs • site safety signage • temporary signage for the benefit of motorists and pedestrians • traffic conditions signage
Tools and equipment may include:	• bolt cutters • wire nippers • tie wire reels • measuring tapes/rules • reinforcement benders • mesh guillotines • a range of general hand and power tools • MMAW machines • oxy acetylene set • cutting attachments
Reinforcement materials may include:	• wire ties • ligatures • spacers/spreaders assemblies • deformed bars • plain rods • bar chairs • mesh sheets of plain bars • mesh sheets of deformed bars

	• scaffolding components • pipe sections • structural steel sections
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Unit Sector(s)

Civil Works (Common Units)

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.