



Australian Government

RIICTB304E Install or replace sub-structure members

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 6.0.

Application

This unit describes the skills and knowledge required to install or replace sub-structure members in civil construction. This includes assessing the implications of the project on bridge capacities, preparing and erecting major and minor sub-structure members, and applying durability treatments.

It applies to those working in operational roles. They generally work under minimal supervision to undertake a broad range of tasks in varied work contexts, using some discretion and judgement in selecting equipment, services or contingency measures.

Licensing, legislative and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Users must check requirements with relevant body before applying the unit.

Unit Sector

Civil construction

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan and prepare to install or replace sub-structure members	1.1 Obtain, interpret, clarify and confirm work instructions 1.2 Access, interpret and apply documentation required to install or replace sub-structure members and confirm work activity is compliant 1.3 Obtain and interpret emergency procedures, and identify steps required to respond to emergencies 1.4 Select and wear personal protective equipment according to site requirements 1.5 Confirm and identify requirements for complying with

ELEMENT	PERFORMANCE CRITERIA
	environmental protection, safety and traffic management signage requirements 1.6 Identify, address and report environmental issues, potential hazards and risks 1.7 Select plant, tools and equipment required to carry out tasks and check for faults 1.8 Identify, confirm, and locate materials required for work application
2. Prepare for installation or replacement	2.1 Assess implications of project on bridge load capacity 2.2 Measure dimensions of original components 2.3 Select resources according to job requirements 2.4 Conduct follow up inspection of work according to job requirements
3. Erect major sub-structure members	3.1 Measure and prepare major sub-structure members for installation according to job requirements 3.2 Fit new members according to job requirements 3.3 Apply durability treatments to new members according to job requirements 3.4 Install connectors to new sub-structure members according to job requirements 3.5 Remove temporary supports
4. Erect minor sub-structure member	4.1 Measure and prepare minor sub-structure members for installation according to job requirements 4.2 Fit new members according to job requirements 4.3 Apply durability treatments to new members according to job requirements 4.4 Install connectors to new sub-structure members according to job requirements
5. Conduct clean-up activities	5.1 Clear work area and dispose of or recycle materials according to site requirements 5.2 Clean, check, perform maintenance on and store machinery, tools and equipment according to manufacturer specifications and site requirements

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Numeracy	Calculates basic measurements including mass and dimensions
Oral communication	- Identifies and interprets information from verbal instructions - Conveys information and instructions to others verbally
Self-management	Monitors and minimises own exposure to worksite risks and hazards during work activities

Unit Mapping Information

Supersedes and is equivalent to RIICTB304D Install or replace sub-structure members.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIICTB304E Install or replace sub-structure members

Modification History

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- install or replace sub-structure members on at least two occasions, including:
 - completing the planning, preparation and erection to design specifications of at least:
 - one major sub-structure member, and
 - one minor sub-structure member.

During the above, the candidate must:

- locate and apply required legislation, documentation, policies and procedures
- identify, report and record hazards and risks
- implement the requirements, procedures and techniques for installing or replacing sub-structure members, including:
 - selecting and using required tools and equipment
 - assessing implications of project on bridge capacity
 - applying durability treatments
- work with others to install or replace sub-structure members that meets required outcomes, including:
 - communicating with others to receive and clarify work instructions
 - using communication techniques and equipment, including signage to advise others of work activity and exclusion zones.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- legislation required to install or replace sub-structure members

- policies, procedures and documentation required to install or replace sub-structure members, including those relating to:
 - site and equipment safety
 - hazard and risk management
 - emergency response
 - work health and safety
 - environmental protection
 - waste management
 - communication techniques and equipment
 - operational, maintenance and basic diagnostic procedures
 - site isolation and traffic control responsibilities
 - project quality requirements
 - job plans and specifications
 - site requirements
 - manufacturer specifications for required plant and equipment
 - workplace reporting requirements
- principles and techniques required to install or replace sub-structure members, including those relating to:
 - temporary support member installation and removal
 - major sub-structure members, including:
 - headstocks
 - sills
 - abutments
 - minor sub-structure members, including:
 - braces
 - wales
 - wing walls
 - pier stability and foundations
 - connector behaviour
 - shoring and jacking systems
 - test boring
 - bridge foundations
 - bridge heritage
 - calculation of material requirements
 - durability treatments
 - bracing and loading
 - interpreting engineering drawings
- types, characteristics, technical capabilities and limitations of plant and equipment required to install or replace sub-structure members, including:
 - impact wrenches

- electric planes
- claw hammers
- proprietary tools
- pinch bars
- oxy-acetylene equipment
- rollers
- materials safety data sheet (SDS) compliance processes
- components of job safety analyses (JSAs), job safety environmental analyses (JSEAs), and safe work method statements (SWMs)
- civil construction terminology related to installing or replacing sub-structure members.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - personal protective equipment
 - equipment required to install or replace sub-structure members
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge

- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 year
	2	2 years
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 years
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation.	

*Guidance on simulated environments has been stipulated in the RII Companion Volume Implementation Guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

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