



Australian Government

Department of Education, Employment and Workplace Relations

TLIS2032A Install rail

Release: 1

TLIS2032A Install rail

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to install rail in accordance with safeworking and regulatory requirements and workplace procedures. It includes identifying job requirements, preparing rail for installation, installing rail, joining rail ends, restoring track, and completing documentation. Licensing or certification requirements are not applicable to this unit.

Application of the Unit

Application of the Unit

Persons achieving competence in this unit will need to fulfil the applicable legislated rail safety requirements including acts and regulations from each state and territory together with any nationally approved compliance codes and/or guidelines.

Work is performed under some supervision, generally within a team environment. It involves the application of routine operational principles and procedures to install rail as part of workplace activities across a variety of operational contexts within the Australian rail system.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

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 required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Identify job requirements	1.1 Scope of work is determined and resources are arranged 1.2 Replacement rail is checked for compliance with acceptance standards in accordance with workplace procedures
2 Prepare rail for installation	2.1 Rails are loaded and unloaded using approved methods to minimise risk to health and safety 2.2 Rails are cut to required length using an appropriate method to minimise delays and wastage 2.3 If required, rails are bent to the correct curvature to ensure correct track geometry is maintained to standard
3 Install rail	3.1 Where required, existing rail is unfastened and removed using appropriate equipment or manual method 3.2 New rail is lifted into place using appropriate equipment or manual method maximising efficiency and minimising risk of injuries
4 Join rail ends	4.1 Rail joints are prepared for welding or are assembled and installed to specifications in accordance with workplace procedures 4.2 Rail bonds or other track circuit connections are installed/restored as required in accordance with workplace procedures
5 Restore track	5.1 Track fastenings are restored in accordance with workplace procedures 5.2 Arrangements are made for rail to be adjusted in accordance with workplace procedures
6 Complete documentation	6.1 Completed work is checked for compliance to standards to ensure safe operations of trains 6.2 Required documentation is completed in accordance with workplace procedures

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant safety, OH&S and environmental procedures and regulations
- Workplace procedures for the installation and replacement of rail

REQUIRED KNOWLEDGE AND SKILLS

- Problems that may occur during the loading and unloading of rail, and action that can be taken to report or resolve the problems
- Hazards that may exist during the loading and unloading of rail, and ways of controlling the risks involved
- Problems that may occur during the installation and replacement of rail, and action that can be taken to report or resolve the problems
- Hazards that may exist during the installation and replacement of rail, and ways of controlling the risks involved
- Rail pressing (crowing) procedures
- Acceptance standards for re-use of rails
- Rail installation acceptance standard
- Characteristics of plant and equipment, transport, structures, hardware and components used in work activities
- Relevant recording and documentation procedures

Required skills:

- Communicate effectively with others when installing and replacing rail
- Interpret and follow operational instructions and prioritise work when installing and replacing rail
- Complete documentation related to the installation and replacement of rail
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when installing and replacing rail
- Promptly report and/or rectify any identified problems, faults or malfunctions that may occur when installing and replacing rail in accordance with regulatory requirements and workplace procedures
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Work systematically with required attention to detail without injury to self or others, or damage to equipment
- Measure rail weight/dimensions
- Load and unload rails
- Cut rails to required length using an appropriate methods
- Drill rail ends or prepare for welding
- Install rail joints
- Crow rails to the correct curvature
- Unfasten and remove rail using appropriate equipment or manual methods including mechanical handling/lifting equipment, track machines

Required skills:

- Lay new rail using appropriate equipment or manual methods including mechanical handling/lifting equipment, track machines
- Install rail fastenings
- Install/restore temporary rail bonds or other track circuit connections
- Check compliance between work and job specifications
- Effectively apply re-railing techniques
- Select and use required personal protective equipment
- Select and use relevant equipment and tools

Evidence Guide**EVIDENCE GUIDE**

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

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 and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
 - the underpinning knowledge and skills
 - relevant legislation and workplace procedures
 - other relevant aspects of the range statement
- Assessment must include exercises which demonstrate competent performance of the following in a range of situations:
 - loading or unloading rails correctly
 - removing existing rail and/or lifting new rail into place using appropriate equipment and methods
 - preparing rail joints and installing them correctly
 - restoring track fastenings according to workplace procedures
 - checking replacement rails meet requirements

Context of and specific resources for assessment

- Performance is demonstrated consistently over a period of time and in a suitable range of contexts
- Resources for assessment include:
 - a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment,

EVIDENCE GUIDE

and/or

- access to an appropriate range of relevant operational situations in the workplace
- In both real and simulated environments, access is required to:
 - relevant and appropriate materials and equipment, and
 - applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment

- Assessment of this unit must be undertaken by a registered training organisation
- As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
- Practical assessment must occur:
 - through activities in an appropriately simulated environment at the registered training organisation, and/or
 - in an appropriate range of situations in the workplace

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.

- | | |
|---|---|
| Operations may be conducted: | <ul style="list-style-type: none"> • by day or night • in all weather conditions |
| Work may be conducted in: | <ul style="list-style-type: none"> • restricted spaces • exposed conditions • controlled or open environments |
| Work may involve: | <ul style="list-style-type: none"> • exposure to chemicals, and dangerous or hazardous substances • movements of equipment, goods and vehicles |
| Rail loading/unloading equipment may include: | <ul style="list-style-type: none"> • off-track or on-track plant • manual methods • rail trains • mechanical handling/lifting equipment |

RANGE STATEMENT

Rail loading/unloading methods may vary according to:

- rail length
- on-site storage
- rail re-use intentions

Rail installation/replacement may include:

- laying new rail
- replacing worn or defective rail with new or second hand rail
- replacing rail defects with new or second hand closure rails
- installing bonded insulated joints
- transposing rails

Equipment may include:

- mechanical handling/lifting equipment
- hand tools, including impact wrench, grinder, tension wrench, friction rail saw, and velocity rail punch
- rail threaders
- fastening equipment
- cutting and boring equipment

Materials may include:

- rail (new or second hand)
- fastenings
- plates
- anchors
- bolts
- nuts
- washer clips
- rail jewellery

Rail joint parts and surroundings to be checked may include:

- joint insulation
- fishbolts
- rail bonds
- rail geometry

Fastening may include:

- bolts
- rail fasteners
- coach screws

Communications equipment/systems may include:

- two-way radios
- telephones/mobile phones
- agreed audible or hand signals

Depending on work context, safety and personal protective equipment may include:

- high visibility clothing
- hearing protection
- gloves
- sunscreen
- sunglasses
- dust masks

RANGE STATEMENT

	• safety glasses • insect repellent • safety headwear • safety footwear • portable radios/mobile phones • hand lamps • flags • safety devices
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures
Information/documents may include:	• operational instructions, policies and workplace procedures • work orders • technical instructions • manufacturers or workplace equipment instructions and operation manuals • emergency procedure manuals • two-way radio/mobile phone operation procedures • QA plans, data and document control • conditions of service, legislation and industrial agreements including workplace agreements and awards
Liaison may include:	• internal or external personnel from other work areas
Applicable procedures and codes may include:	• legislated rail safety requirements including acts and regulations from each applicable state and territory together with any nationally approved compliance codes and/or guidelines • relevant Australian Standards and related requirements, including AS 4292 • relevant state/territory OH&S legislation • relevant state/territory environmental protection legislation

Unit Sector(s)

Not Applicable

Competency Field

Competency Field

S - Construction and Installation