



Australian Government

TLIS2013C Install minor structures

Release 1

TLIS2013C Install minor structures

Modification History

New release. This unit replaces and is equivalent to TLIS2013B.

Unit Descriptor

This unit involves the skills and knowledge required to install minor non-track bearing structures and assemblies in rail industry contexts in accordance with safeworking and regulatory requirements, and workplace procedures.

It includes planning and preparing for the installation, installing the structure in accordance with workplace requirements, and cleaning up the site after installation.

Licensing or certification requirements may apply to this unit.

Application of the Unit

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

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

Operators of mechanised equipment must have undertaken training and, where appropriate, hold the relevant licence, permit or certificate and be recognised as competent for the class of machinery being used.

Licensing/Regulatory Information

Not applicable.

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

Elements and Performance Criteria

- 1 Plan and prepare for work**
 - 1.1 Type of structure to be installed is identified and appropriate methods are planned in accordance with workplace procedures and specifications
 - 1.2 Structure and/or materials for installation are identified, obtained and prepared in accordance with plans and specifications

- 2 Assemble and install structural elements**
 - 2.1 Where required, excavation is conducted to standards in accordance with workplace procedures and regulatory requirements
 - 2.2 Where required, foundations are installed in accordance with workplace procedures and specifications
 - 2.3 Components are assembled and installed in accordance with specifications and/or plans using appropriate methods
 - 2.4 Level/position of structure is adjusted to required standard to maintain correct track geometry/clearances
 - 2.5 Fasteners are installed and tightened in position using correct fastening method to ensure structural integrity
 - 2.6 Installed structure is checked against specified requirements and/or plans, and required adjustments are made

- 3 Maintain structures**
 - 3.1 Components requiring replacement are checked against standards and are measured for preparation of replacement components
 - 3.2 Materials required for job are identified and organised as required to enable appropriate replacement of components
 - 3.3 Replacement components are cut and shaped to required standard in accordance with workplace procedures
 - 3.4 Surfaces of components are treated using appropriate methods and materials as required

- 4 Finalise work**
 - 4.1 Site is cleaned up to remove unnecessary materials and is restored to environmentally sound and safe condition
 - 4.2 Work as executed documentation is completed as required in accordance with organisational procedures

Required Skills and Knowledge

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

Required knowledge:

- Construction methods and techniques for basic structures
- Functions of different types of minor structures
- Hazards that may exist when installing minor structures, and ways of controlling the risks involved
- Information on the use of epoxy and grouts for mortar pads
- Problems that may occur when installing minor structures, and action that can be taken to report or resolve them
- Relevant recording and documentation procedures
- Relevant safety, occupational health and safety (OH&S) and environmental procedures and regulations
- Workplace procedures for installing minor structures

Required skills:

- Adapt to differences in equipment in accordance with standard operating procedures
- Apply precautions and required action to minimise, control or eliminate potential hazards during work activities
- Check compliance between work and job specifications
- Check correct track geometry/clearances
- Communicate effectively with others when installing minor structures
- Complete documentation relating to installing minor structures
- Follow operational instructions and work sequences when installing minor structures
- Modify activities depending on operational contingencies, risk situations and environments
- Monitor work activities in terms of planned schedule
- Operate communication equipment to required protocol
- Read and interpret plans, specifications, instructions and manuals relating to installing minor structures
- Report and rectify within limits of own role problems, faults and malfunctions that may occur when installing minor structures in accordance with regulatory requirements and workplace procedures
- Select and use relevant equipment and tools
- Select and use required personal protective equipment (PPE)
- Work collaboratively with others when installing minor structures

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 required knowledge and skills
 - relevant legislation and workplace procedures
 - other relevant aspects of the range statement

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, 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

- As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
- Practical assessment must occur:
 - in an appropriate range of situations in the workplace

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.

- Minor structures to be installed may include:
- pipes and culverts
 - overhead wiring system (OHWS) - single mast
 - retaining walls
 - level crossings
 - buffer stops
 - ballast retention walls
 - ballast logs
 - intermediate rail support on ballast walls
 - earthworks protection structures
 - level crossings (non-rail items)
- Work may be conducted in:
- restricted spaces
 - exposed conditions
 - controlled or open environments
- Work may involve exposure to:
- chemicals
 - dangerous or hazardous substances
 - movement of equipment, goods and vehicles
- Equipment may include:
- cranes
 - crane and lifting gear
 - hand tools
 - small power tools
 - rollers and wacker packers for compaction
 - welding, oxy and cutting equipment
 - scaffolding
 - ladders
 - elevated work platforms (EWPs)
- Materials may include:
- steel
 - concrete and concrete products
 - timber
 - rubber products
 - bolts and fasteners
 - epoxy grouts
 - cement grouts
 - paint (protective treatment)
- Liaison may include:
- internal or external personnel from other work areas, such as train controllers
 - road authorities
 - local councils
 - landowners

Communication equipment and systems may include:

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

Depending on work context, safety and PPE may include:

- high visibility clothing
- hearing protection
- gloves
- sunscreen
- sunglasses
- safety glasses
- insect repellent
- safety headwear
- safety footwear
- portable radios and mobile phones
- hand lamps
- flags
- safety devices

Depending on the type of organisation concerned and the local terminology used, organisational procedures may be known as:

- company procedures
- enterprise procedures
- workplace procedures
- established procedures

Information and documents may include:

- operational instructions, policies and workplace procedures
- local authority regulations and procedures
- work orders
- technical instructions
- manufacturer or workplace equipment instructions and operation manuals
- emergency procedure manuals
- two-way radio or mobile telephone operation procedures
- quality assurance plans, data and document control
- conditions of service, legislation and industrial agreements, including workplace agreements and awards

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 state/territory regulations, codes of practice and safeworking system requirements
- relevant Australian Standards (AS) and related requirements, including AS 4292 Railway safety management
- relevant state/territory legislation relating to:

- environmental protection
- OH&S

Unit Sector(s)

Not applicable.

Competency Field

S – Construction and Installation