



Australian Government

Department of Education, Employment and Workplace Relations

TLIS3038A Install points and crossings

Release: 1

TLIS3038A Install points and crossings

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to install points and crossings in accordance with approved standards, safeworking and regulatory requirements and workplace procedures. It includes carrying out relevant construction work on site, installing points and crossings, and completing all required documentation. Licensing or certification requirements may be 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 the installation of points and crossings 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

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 Construct points and crossings	1.1 Work requirements are determined to identify scope of work and resources required 1.2 Delivered materials are checked for compliance with design 1.3 Assembly area is prepared 1.4 Structure is fabricated according to design specification if required to minimise on-site disruptions to on-site workflow, if applicable 1.5 Track layout is assembled in accordance with the specified design, manufacturers instructions and workplace procedures 1.6 Track layout dimensions, geometry and condition are checked for compliance with design 1.7 Track layout is prepared for transport to site in accordance with manufacturers instructions and workplace procedures 1.8 Track layout is transported to installation site using appropriate methods and equipment in accordance with workplace requirements and procedures
2 Install points and crossing	2.1 Existing trackwork is removed from worksite 2.2 Track bed is prepared for installation of track layout in accordance with workplace procedures 2.3 New points and crossings are installed in accordance with specified design, manufacturers instructions and workplace procedures 2.4 Track layout dimensions, geometry, condition and operation are checked for compliance to standards in accordance with design, manufacturers instructions and workplace procedures
3 Complete documentation	3.1 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 of points and crossings
- Problems that may occur during the installation of points and crossings, and action that can be

REQUIRED KNOWLEDGE AND SKILLS

taken to report or resolve the problems

- Hazards that may exist during the installation of points and crossings, and ways of controlling the risks involved
- Features and principles of operation of points and crossings
- Measurement techniques
- Clearances and tolerances
- Rail bending techniques applied to points and crossing components
- Points and crossings acceptance standards
- Techniques for the installation of points and crossings
- Relevant communication systems and procedures
- Authorisation/approval processes and procedures
- Documentation and record keeping requirements

Required skills:

- Communicate effectively with others when installing points and crossings
- Read and interpret technical data, standards and drawings relevant to the installation of points and crossings
- Interpret and follow operational instructions and prioritise work when installing points and crossings
- Complete documentation related to the installation of points and crossings
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when installing points and crossings
- Promptly report and/or rectify any identified problems, faults or malfunctions that may occur when installing points and crossings in accordance with regulatory requirements and workplace procedures
- Plan own work including predicting consequences and identifying improvements
- 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
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Select and use hand tools, power tools and equipment
- Assemble track layouts to plans and specifications
- Use relevant plant and mechanised equipment
- Use appropriate equipment to make accurate measurements on points and crossings

Required skills:

- Select and use required personal protective equipment

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:
 - assembling track layout and checking dimensions, geometry and condition of assembled track
 - preparing track bed according to workplace procedures
 - installing points and/or crossings correctly
 - checking for correct operation of installed points and/or crossings

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

EVIDENCE GUIDE

	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:	• by day or night • in all weather conditions
Work may be conducted in:	• restricted spaces • exposed conditions • controlled or open environments
Work may involve:	• exposure to chemicals, and dangerous or hazardous substances • movements of equipment, materials and vehicles
Points and crossing may include:	• turnouts • diamond crossings • slips • catchpoints • expansion switches
Equipment may include:	• off-track plant, cranes • mechanical lifting and handling devices • rail mounted transporter vehicles • hand tools and small plant • rail saws, rail drills
Measurement equipment may include:	• measuring tapes • stringline • rail gauges (switch, crossing)

RANGE STATEMENT

- Materials may include:
- gauge boards
 - track layout components
 - rail jewellery
 - sleepers/ties
 - bearers
- Crossings may include:
- fabricated
 - Rail bound manganese
 - monoblock
 - Davis
 - compound crossings
 - swing nose
 - spring wing type crossings
 - single or dual gauge
- Bearerers may include:
- timber
 - concrete
 - steel
- Components may include:
- switches
 - crossings
 - stockrails
 - closure rails
 - rail braces
 - bearer plates
 - bolts, clips
 - studs/switch stops
 - heel blocks
 - housings
 - anti-creep devices
 - chairs
 - switch rollers
 - checkrails
 - chocks
 - manual points equipment
- Fastenings may include:
- slip/friction
 - resilient
- Switch blades may be:
- asymmetrical
 - conventional
 - undercut
 - housed
- Heels of switches may be:
- fixed or flexible

RANGE STATEMENT

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|---|---|
| Operations of switches may be: | <ul style="list-style-type: none">• manual• interlocked |
| Liaison may include: | <ul style="list-style-type: none">• internal or external personnel from other work areas (e.g. signalling staff) |
| Communication systems may include: | <ul style="list-style-type: none">• two-way radios• telephones/mobile phones• agreed audible or hand signals |
| Safety and personal protective equipment may include: | <ul style="list-style-type: none">• high visibility clothing• hearing protection• gloves• sunscreen• sunglasses• safety glasses• dust mask• 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: | <ul style="list-style-type: none">• company procedures• enterprise procedures• organisational procedures• established procedures |
| Information/documents may include: | <ul style="list-style-type: none">• operational instructions, policies and workplace procedures• local authority regulations and procedures• works orders• technical instructions, plans and specifications• manufacturers or workplace equipment operation manuals and specifications• 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 |
| Information may be provided: | <ul style="list-style-type: none">• electronically• in writing, via forms/documents/plans• orally, via face-to-face communications |

RANGE STATEMENT

Applicable regulations and legislation 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