



Australian Government

Department of Education, Employment and Workplace Relations

TLIS3041A Construct timber or composite points and crossings

Release: 1

TLIS3041A Construct timber or composite points and crossings

Modification History

Not applicable.

Unit Descriptor

This unit involves the skills and knowledge required to supervise the construction of points and crossings on timber or composite bearers in accordance with approved standards, safeworking and regulatory requirements, and workplace procedures. It includes carrying out relevant construction work, preparing the points and crossings for transport, and completing required documentation.

Licensing or certification requirements are not currently applicable to this unit. Persons achieving competence in this unit will need to fulfil the legislated rail safety requirements, including acts and regulations from each applicable state and territory, together with any nationally approved compliance codes and/or guidelines.

Application of the Unit

The unit involves the application of routine operational principles and procedures to the construction of points and crossings on undrilled timber or composite bearers 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

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 Prepare and fabricate points and crossings	1.1	Work requirements are established to identify scope of work and resources required
	1.2	Design or plan for construction is obtained and interpreted
	1.3	Assembly area is prepared or identified in accordance with workplace procedures
	1.4	Delivered materials are checked for compliance with design
	1.5	Structure is fabricated according to design specification
	1.6	Bearers are selected for correct length, placed on assembly area, and marked up in accordance with the specified design and workplace procedures
	1.7	Reference rail is selected, marked up and fixed to the bearers in accordance with the specified design and workplace procedures
	1.8	Remaining steelwork is adjusted for correct geometry and attached to bearers in accordance with the specified design and workplace procedures
	1.9	Dimensions, geometry and condition are checked for compliance with design
2 Prepare points and crossings for transport	2.1	Points and crossings are prepared for transport to site in accordance with design 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 construction of timber or composite points and crossings
- Problems that may occur when constructing timber or composite points and crossings, and action that can be taken to report or resolve them
- Hazards that may exist when constructing timber or composite points and crossings, and ways of controlling the risks involved
- Different types of timber or composite sleepers and bearers and their individual characteristics
- Features and principles of points and crossings operation
- Measurement techniques
- Clearances and tolerances
- Rail bending techniques applied to point and crossing components
- Point and crossing acceptance standards
- Techniques for the construction of timber or composite points and crossings
- Documentation and record-keeping requirements
- Appropriate hand tools, power tools and equipment required to complete activities

Required skills:

- Communicate effectively with others when constructing timber or composite points and crossings
- Read and interpret technical data, standards and drawings relating to the construction of timber or composite points and crossings
- Interpret and follow operational instructions and prioritise work when constructing timber or composite points and crossings
- Complete documentation relating to the construction of timber or composite points and crossings
- Use geometric and dimension basic principles to ensure compliance with design
- Work collaboratively with others when constructing timber or composite points and crossings
- 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

- Assemble track layouts to plans and specifications
- Use appropriate equipment to make accurate measurements on points and crossings
- Select and use required personal protective equipment (PPE)

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 that demonstrate competent performance of the following in a range of situations:
 - supervising the construction of timber or composite points and crossings on at least two separate occasions

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
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Method of assessment

- 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, and/or
 - in an appropriate range of situations in the workplace
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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.

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|---|---|
| Work may involve: | <ul style="list-style-type: none">• exposure to chemicals, and dangerous or hazardous substances• movement of equipment, materials and vehicles |
| Points and crossing may include: | <ul style="list-style-type: none">• turnouts• diamond crossings• slips• catchpoints• expansion switches |
| Equipment may include: | <ul style="list-style-type: none">• off-track plant• cranes• mechanical lifting and handling devices• rail-mounted transporter vehicles• hand tools and small plant• rail saws and rail drills |
| Measurement equipment may include: | <ul style="list-style-type: none">• measuring tapes• stringline• rail gauges (switch and crossing)• gauge boards |
| Materials may include: | <ul style="list-style-type: none">• rail• rail jewellery• sleepers and ties• bearers |
| Liaison may include: | <ul style="list-style-type: none">• internal or external personnel from other work areas, such as signalling staff |
| Communication systems may include: | <ul style="list-style-type: none">• two-way radios• telephones, including mobile phones• agreed audible or hand signals |
| Safety and PPE 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 and mobile phones
 - hand lamps
 - flags
 - safety devices
- Information and documents may include:**
- operational instructions, policies and workplace procedures
 - local authority regulations and procedures
 - works orders
 - technical instructions, plans and specifications
 - manufacturer or workplace equipment operation manuals and specifications
 - emergency procedure manuals
 - two-way radio or mobile telephone operation procedures
 - quality assurance (QA) plans, data and document control
- Information may be provided:**
- electronically
 - in writing, via forms, documents and plans
 - orally, via face-to-face communications
- 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
 - relevant state and territory legislation relating to:
 - environmental protection
 - OH&S

Unit Sector(s)

Not applicable.

Competency Field

S – Construction and Installation