



Australian Government

Department of Education, Employment and Workplace Relations

TLIB3088A Examine steel structures

Release: 1

TLIB3088A Examine steel structures

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to examine steel structures in accordance with safeworking and regulatory requirements and workplace procedures. It includes obtaining all relevant previous reports, performing the detailed examination, initiating appropriate necessary actions if any, and completing all required 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 minimal supervision, generally within a team environment. It involves the application of routine operational principles and procedures to the conduct of a detailed steel structures examination 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 Obtain previous reports | 1.1 Operational history of structure is reviewed from available sources
1.2 Previous defects identified in reports are noted to enable rechecking of problem areas
1.3 Relevant personnel are contacted to identify any reported complaints or indications of wear or damage |
| 2 Perform detailed examination | 2.1 Steel structures and components are visually inspected and checked for signs of buckling, cracking, corrosion, deterioration and damage in accordance with workplace procedures
2.2 Connections between steel components are visually inspected and checked for signs of wear looseness, cracking, corrosion, deterioration and damage in accordance with workplace procedures
2.3 Protective coatings on steel structures and components are visually inspected and checked for condition
2.4 Relevant inspection aids are used to perform detailed inspection to identify defects in accordance with workplace procedures
2.5 Defects or deficiencies are identified in accordance with workplace procedures |
| 3 Take appropriate actions | 3.1 Major defects affecting safe passage are acted on as soon as possible in accordance with workplace procedures
3.2 Defects and deficiencies are reported to enable repairs to be effected in a timely manner |
| 4 Complete documentation | 4.1 Examination schedule or work report data is completed in accordance with workplace procedures
4.2 Documentation on work undertaken is completed in accordance with workplace requirements |

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 conduct of a detailed steel structures examination
- Problems that may occur during the conduct of a detailed steel structures examination, and

REQUIRED KNOWLEDGE AND SKILLS

action that can be taken to report or resolve the problems

- Hazards that may exist when conducting a detailed steel structures examination, and ways of controlling the risks involved
- Steel structures examination methods and techniques
- Fault detection techniques
- Relevant recording and documentation procedures

Required skills:

- Communicate effectively with others when conducting a detailed steel structures examination
- Read and interpret plans and specifications relevant to a detailed steel structures examination
- Follow operational instructions and work sequences when undertaking steel structures examination
- Identify defects
- Complete documentation related to a detailed steel structures examination
- Operate communication equipment to required protocol
- Work collaboratively with others when conducting a detailed steel structures examination
- Promptly report and/or rectify any identified problems, faults or malfunctions when conducting a detailed steel structures examination in accordance with regulatory requirements and workplace procedures
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities
- Plan and organise remedial work
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Identify, select and use measuring instruments and equipment
- 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

EVIDENCE GUIDE

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:
 - examining a range of structure types
 - taking appropriate action for identified defects
 - completing documentation of examination results

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

- 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:
 - 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 or exposed conditions• controlled or open environments |
| Work may involve exposure to: | <ul style="list-style-type: none">• chemicals, dangerous or hazardous substances• movements of equipment, materials and vehicles |
| Structures may include: | <ul style="list-style-type: none">• underbridges• overbridges• footbridges• culverts• tunnels• retaining walls• platforms• overhead wiring structures• signal gantries• noise barriers• service crossings• buffer stops• lighting towers• water towers• turntables• elevated roads |
| Equipment may include: | <ul style="list-style-type: none">• torch• geologists hammer• measuring tape• wire brush• spirit level with straight edge• plumb bob• camera• binoculars• mirror• vernier calipers• ultrasonic tester• dry film thickness gauge• demec gauge, points and adhesive• scaffolding• extension ladder |

RANGE STATEMENT

Structures examination methods may include:	• elevated work platforms (EWP) • boat or barge • visual examination • hammer test • magnetic or electronic gauges • dye penetrant • magnetic particle • ultrasonic testing • x-ray
Liaison may include:	• internal/external personnel from other work areas (e.g. train controllers) • road authorities • local councils • landowners
Communication equipment systems may include:	• two-way radios • telephones/mobile phones • agreed audible or hand signals
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures
Depending on work context, safety and personal protective equipment may include:	• high visibility clothing • hearing protection • gloves • sunscreen • sunglasses • safety glasses • insect repellent • safety headwear • safety footwear • portable radios/mobile phones • hand lamps • flags • tripods • harness and ropes • respirator • safety mask • gas detectors • safety devices

RANGE STATEMENT

Information/documents may include:

- local authority regulations and procedures
- work orders
- examination reports and defect lists
- relevant log or record book
- local instructions
- manufacturers or workplace equipment instructions and operation manuals
- emergency procedure manuals
- two-way radio/mobile phone operation procedures
- emergency procedures manual
- conditions of service, legislation and industrial agreements including workplace agreements and awards

Information may be provided:

- electronically
- in writing, via forms/documents/plans
- orally, via face-to-face communications
- via trackside signals

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 state/territory regulations, codes of practice and safeworking system requirements
- 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

B - Equipment Checking and Maintenance