



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **TLIB2096A Repair concrete/masonry structures**

**Release: 1**

## **TLIB2096A Repair concrete/masonry structures**

### **Modification History**

Not Applicable

### **Unit Descriptor**

#### **Unit Descriptor**

This unit involves the skills and knowledge required to repair concrete/masonry structures and their components in accordance with safeworking and regulatory requirements and workplace procedures. It includes determining job requirements, preparing components, performing repairs, and cleaning up the site after maintenance activities. Licensing or certification requirements are not applicable to this unit.

### **Application of the Unit**

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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 repair of concrete/masonry structures and their components 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

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
<b>1 Determine job requirements</b>	1.1 Structures are inspected as necessary to locate defects 1.2 Job requirements are determined in accordance with workplace procedures, including identification of scope of work and resources required
<b>2 Prepare components for repair</b>	2.1 Components requiring repair are prepared in accordance with workplace procedures 2.2 Materials required for job are identified and organised as required to enable appropriate repair of components
<b>3 Perform repairs</b>	3.1 Defective area is removed in accordance with workplace procedures 3.2 Repairs are carried out to required standard in accordance with workplace procedures
<b>4 Clean up site</b>	4.1 Site is cleaned up to ensure it is restored and environmentally sound and safe in accordance with workplace procedures and environmental regulations and standards
<b>5 Complete documentation</b>	5.1 Documentation is completed as required 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 repair of concrete/masonry structures
- Problems that may occur during the repair of structures, and action that can be taken to report or resolve the problems
- Hazards that may exist when repairing concrete/masonry structures, and ways of controlling the risks involved
- Functions of different types of concrete/masonry structures
- Concrete/masonry structures repair methods and techniques
- Information on the use of epoxy and grouts for mortar pads and cracks
- Basic concrete construction techniques
- Relevant recording and documentation procedures

**Required skills:**

- Communicate effectively with others when repairing concrete/masonry structures
- Read and interpret plans and specifications relevant to the repair of concrete/masonry structures
- Follow operational instructions and work sequences when undertaking concrete/masonry structures repair
- Complete documentation related to the repair of concrete/masonry structures
- Operate communication equipment to required protocol
- Work collaboratively with others when repairing concrete/masonry structures
- Promptly report and/or rectify any identified problems, faults or malfunctions that may occur when repairing concrete/masonry structures in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events that may arise during the repair of concrete/masonry structures
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Select and use relevant tools and equipment
- Adapt to differences in tools and equipment and work requirements in accordance with standard operating procedures
- Select and use required personal protective equipment
- Identify defects

**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

## EVIDENCE GUIDE

- other relevant aspects of the range statement
  - Assessment must include exercises which demonstrate competent performance of the following in a range of situations:
    - preparing components to be repaired
    - repairing existing concrete/masonry structures using a range of repair techniques
    - repairing a range of defect types
- 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:
- by day or night
  - in dry weather conditions

## RANGE STATEMENT

- 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, goods and vehicles
- Structures and components may include:
- concrete structures
  - masonry structures
  - underbridges, overbridges, footbridges
  - culverts
  - tunnels
  - retaining walls
  - platforms
  - overhead wiring structures
  - signal gantries
- Equipment may include:
- welding, oxy and cutting equipment
  - temporary supports
  - manual tools
  - air tools and compressor
  - small power tools
  - scaffolding
  - ladders
  - elevated work platforms (EWP)
  - boat/barge
- Materials may include:
- epoxy grouts
  - cement grouts
  - paint (protective treatment)
  - carbon fibre
  - bolts and fasteners
  - reinforcement
- Maintenance methods may include:
- repairing
  - painting (protective treatment)
  - cathodic protection
  - bonding
- Liaison may include:
- internal/external personnel from other work areas (e.g. train controllers)
  - road authorities
  - local councils
  - landowners

## RANGE STATEMENT

Communication systems may include:

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

Information may be provided:

- electronically
- in writing, via forms/documents/plans
- orally, via face-to-face communications
- via trackside 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
- safety harness
- torch
- safety devices
- respirator

Information/documents may include:

- operational instructions, policies and workplace procedures
- local authority regulations and procedures
- work orders
- technical instructions
- material safety data sheets (MSDS)
- 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

Applicable procedures and codes

- legislated rail safety requirements including acts and regulations from each applicable state and territory



**RANGE STATEMENT**

may include:

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