



**Australian Government**

# **TLIW3043 Weld rail on tram/light rail systems using electric welding process**

**Release: 2**

# TLIW3043 Weld rail on tram/light rail systems using electric welding process

## Modification History

**Release 2.** This is the second release of this unit of competency in the TLI Transport and Logistics Training Package:

- Minor word change in PC 1.1, 4.1 and 6.2
- Minor statement changes in Assessment Conditions.

**Release 1.** This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

## Application

This unit involves the skills and knowledge required to weld rail, crossings or switches on tram or light rail systems using an electric welding process in accordance with tram/light rail network standards, safeworking and regulatory requirements, and organisational procedures.

It includes preparing rails, crossings or switches for welding, gouging or grinding; setting up welding equipment; performing the welding operation; checking weld conformance; and completing required documentation.

This unit covers the processes used to repair rail surface defects and restore rail profile to plain rail, crossings and switches.

Welding equipment may include:

- electric welders
- electrode holder
- generators
- robotic welder
- wirefeed welding unit.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

## Pre-requisite Unit

Not applicable.

## Competency Field

W – Equipment and Systems Operations

## Unit Sector

Rail sector.

## Elements and Performance Criteria

### ELEMENTS

Elements describe the essential outcomes.

### PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- |   |   |
|---|---|
| <b>1 Prepare rails, crossings or switches for welding</b>   | <b>1.1</b> Weld repair area is identified and assessed in accordance with tram/light rail network standards and workplace procedures                      |
|   | <b>1.2</b> Welding equipment and consumables are prepared and checked for serviceability  |
|   | <b>1.3</b> Hazards are identified, risks are assessed and control measures are implemented  |
|   | <b>1.4</b> Weld repair area is prepared for welding in accordance with workplace standards and procedures   |
|   | <b>1.5</b> Track components are assembled/aligned to specification as required  |
| <b>2 Assemble and set up welding equipment</b>              | <b>2.1</b> Welding equipment is set up and adjusted to meet welding process requirements  |
|   | <b>2.2</b> Accessories and consumables are selected for use   |
| <b>3 Assemble and set up gouging and grinding equipment</b> | <b>3.1</b> Gouging and grinding equipment is assembled and set up   |
|   | <b>3.2</b> Equipment settings are adjusted to meet process requirements   |
|   | <b>3.3</b> Accessories and consumables are selected for use   |
| <b>4 Remove defect</b>                                      | <b>4.1</b> Appropriate method to be used to remove the defect is identified in accordance with tram/light rail network standards and workplace procedures |
|   | <b>4.2</b> Defect is removed using identified method in accordance with organisational standards and procedures   |

- |   |  |
|---|--|
| <b>5 Perform welding operation</b>                        | <b>5.1</b> Weld metal is applied to repair area to meet specifications in accordance with tram/light rail network standards and workplace procedures |
|   | <b>5.2</b> Welded area is cleaned in preparation for grinding  |
|   | <b>5.3</b> Welded area is ground in accordance with tram/light rail network standards and workplace procedures                                       |
| <b>6 Check weld conformance</b>                           | <b>6.1</b> Finished ground weld area is visually inspected for surface finish and defects  |
|   | <b>6.2</b> Finished ground weld area is checked for conformance to rail/crossing/switch profile tram/light rail network standards                    |
| <b>7 Complete post-operative checks and documentation</b> | <b>7.1</b> Equipment is checked for serviceability   |
|   | <b>7.2</b> Defective equipment is replaced and/or reported for servicing/repair in accordance with organisational policies and workplace procedures  |
|   | <b>7.3</b> Documentation is completed and processed in accordance with organisational requirements   |

## Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

## Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

## Unit Mapping Information

This unit replaces and is equivalent to TLIW3043A Weld rail on tram/light rail systems using electric welding process.

## **Links**

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>