



Australian Government

TLIW3015 Weld rail using aluminothermic welding process

Release: 1

TLIW3015 Weld rail using aluminothermic welding process

Modification History

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 using the aluminothermic welding process in accordance with safeworking and regulatory requirements, and workplace procedures.

It includes preparing and planning the welding method, preparing the rail for aluminothermic welding, carrying out the welding process, checking weld conformance and completing required documentation.

People achieving competence in this unit will need to fulfil the applicable state/territory legislated rail safety and to comply with relevant codes of practice and/or guidelines.

Work is performed under some supervision, generally within a team environment. It involves the application of routine operational principles and procedures when welding rail using the aluminothermic welding technique, 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.

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

Not applicable.

Elements and Performance Criteria

Elements describe the essential outcomes.

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

1 Prepare and plan welding method

- 1.1 Work requirements are determined to identify scope of work and resources required
- 1.2 Welding equipment and consumables are prepared and checked for serviceability
- 1.3 Hazards are identified, risks are assessed and control measures are implemented
- 1.4 Site is cleared of obstructions and combustible material to minimise risk of accidents and fire
- 1.5 Firefighting and other safety equipment is organised, checked and located in accordance with required regulations
- 1.6 Personnel are briefed about safety precautions specific to aluminothermic welding as required to minimise risk of injury

2 Prepare rail for welding

- 2.1 Location of weld is identified and assessed in accordance with standards and procedures
- 2.2 Track is prepared for welding in accordance with workplace standards and procedures
- 2.3 Rail is prepared for welding in accordance with workplace standards and procedures

3 Carry out welding process

- 3.1 Moulds are fitted and luted to standard to prevent leakage of the molten reaction
- 3.2 Rails are pre-heated to standard to prevent heat loss
- 3.3 Rails are welded using aluminothermic method in accordance with approved procedures
- 3.4 Welding equipment is removed according to approved procedures
- 3.5 Excess material is removed from weld in accordance with workplace procedures
- 3.6 Rail profile is restored to standard using rail profile grinder in accordance with workplace procedures

- 3.7 Arrangements are made for track to be restored
- 4 Check weld conformance**
 - 4.1 Finish ground weld area is visually inspected for surface finish and defects
 - 4.2 Finish ground weld area is checked for conformance to rail profile and geometry acceptance standards
- 5 Complete documentation**
 - 5.1 Required documentation and/or record keeping procedures and processes are confirmed
 - 5.2 Documentation and/or records are filled in legibly and proofread
 - 5.3 Documentation and/or records are processed in accordance with workplace 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.

Non-essential conditions can be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to TLIW3015A Weld rail using aluminothermic welding process.

Links

Companion Volume implementation guides are found in VETNet -

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