



Australian Government

TLIW0008 Weld rail using flashbutt welding process

Release: 1

TLIW0008 Weld rail using flashbutt 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 flashbutt welding process in accordance with safeworking and regulatory requirements, and workplace procedures.

It includes performing pre-operational and post-operational equipment checks, preparing rail for welding, carrying out flashbutt welding, checking weld conformance and completing all required documentation.

People achieving competence in this unit will need to fulfil the applicable state/territory legislated rail safety requirements 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 flashbutt welding process, 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.

Pre-requisite Unit

Not applicable.

Competency Field

W – Equipment and Systems Operations

Unit Sector

Rail sector.

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

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

1 Perform pre-operational equipment checks

- 1.1** Detailed pre-operational equipment checks are conducted in accordance with manufacturer specifications and/or local maintenance schedules
- 1.2** Deficiencies with equipment are identified and rectified in accordance with workplace procedures
- 1.3** Firefighting and other safety equipment is organised, checked and located in accordance with required regulations
- 1.4** Relevant personnel are notified of problems and documentation is completed

2 Prepare rail for welding

- 2.1** Weld location is checked to confirm suitability for welding in accordance with workplace procedures and rail network standards
- 2.2** Hazards are identified, risks assessed and control measures implemented
- 2.3** Track preparation for welding is arranged, as required, in accordance with workplace procedures and rail network standards
- 2.4** Rail ends are prepared for welding in accordance with workplace procedures and rail network standards

3 Carry out flashbutt welding

- 3.1** Flashbutt welding equipment is prepared for use
- 3.2** Flashbutt welding unit is clamped to rail ensuring accurate alignment
- 3.3** Equipment is operated in accordance with machine operation instructions and workplace procedures to achieve appropriate quality standard
- 3.4** Warning systems are monitored and appropriately responded to during operation to maintain correct functionality of equipment
- 3.5** Track restoration is arranged, as required, in accordance with workplace procedures and rail network standards
- 3.6** Weld is profile-ground to ensure smooth running surface in accordance with workplace procedures and rail

- network standards
- 4 Check weld conformance**
- 4.1** Finished ground weld area is visually inspected for surface finish and defects
- 4.2** Finished ground weld area is checked for conformance to rail profile and geometry acceptance rail network standards
- 5 Perform post-operational equipment checks**
- 5.1** Post-operational equipment checks are conducted to identify defects and maintenance requirements, in accordance with manufacturer specifications or local maintenance schedules
- 5.2** Deficiencies with equipment are identified and rectified in an appropriate manner to maintain correct functionality of equipment
- 5.3** Relevant personnel are notified of problems and/or documentation is completed in accordance with instructions and relevant codes of practice
- 6 Complete documentation**
- 6.1** Required documentation and/or record keeping procedures and processes are confirmed
- 6.2** Documentation and/or records are filled in legibly and proofread
- 6.3** Documentation and/or records are processed in accordance with workplace procedures

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 TLIW3016 Weld rail using flashbutt welding process.

Links

Companion Volume Implementation Guides are found in VETNet -

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

Assessment Requirements for TLIW0008 Weld rail using flashbutt welding process

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least 25 separate occasions and include:

- applying relevant safeworking and workplace procedures
- carrying out required welding operations
- checking compliance of work with job specifications
- identifying job hazards and taking required action to minimise, control or eliminate identified hazards
- implementing contingency plans
- implementing required fire control workplace procedures
- interpreting and following rail network standards and operational instructions including following scheduled work process
- modifying activities depending on operational contingencies, risk situations and environments
- monitoring work activities in terms of planned schedule
- operating flashbutt welding equipment in accordance with workplace procedures
- planning scheduled work including predicting consequences and identifying improvements
- reading and interpreting relevant instructions, procedures, route information and signs
- reporting and/or rectifying identified problems, faults or malfunctions, in accordance with workplace procedures
- selecting and using required personal protective equipment (PPE)
- working collaboratively with others
- working systematically with required attention to detail without injury to self or others, or damage to equipment.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- characteristics of relevant plant and equipment, transport, structures, hardware and components used in work activities
- emergency management plan including firefighting and other safety equipment

- hazardous situations and related personal protection measures
- hazards that may exist when welding rail using the flashbutt welding process, and ways of controlling the risks involved
- materials identification, handling and storage, safety data sheets (SDS)/material safety data sheets (MSDS) and/or manufacturer instructions
- problems that may occur when using the flashbutt welding process and equipment, and action that can be taken to report or resolve these problems
- rail welding network standards
- relevant recording and documentation procedures
- technical knowledge relevant to flashbutt welding
- work health and safety (WHS)/occupational health and safety (OHS) and environmental procedures and regulations
- workplace procedures for operating flashbutt welding equipment
- workplace procedures for welding rail using the flashbutt welding process.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Practical assessment of twenty-five (25) successful flashbutt welds in an appropriate range of situations in the rail corridor workplace is required.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or simulations
- relevant and appropriate materials, tools, welding equipment and PPE currently used in industry
- applicable documentation including workplace procedures, regulations, rail network standards, SDS/MSDS, codes of practice and operation manuals.

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