Title	**Install rail in preparation for forming continuous welded rail**		
Level	**4**	**Credits**	**10**

Purpose	People credited with this unit standard are able to, in preparation for forming continuous welded rail: explain continuous welded rail; prepare to install rail; undertake installation of rail; create rail joints; install rail fastenings and adjust track parameters in preparation for forming continuous welded rail; and check work and complete documentation.

Classification	Rail Transport > Rail Infrastructure

Available grade	Achieved

Guidance Information

1 Assessment against this unit standard is to be carried out within the context of an organisation operating under a current, valid Rail Licence issued in accordance with the provisions of the Railways Act 2005. The organisation's operating rules, codes, and instructions, referred to in this unit standard, are those the organisation has in place to meet the requirements of the Rail Licence.

2 Legislation relevant to this unit standard includes:
Health and Safety at Work Act 2015;
Railways Act 2005.

3 Definitions
Continuous welded rail refers rail over 75 metres in length, that is formed by welding shorter sections of rail into a continuous length through the thermit or flashbutt welding process, and de-stressed.
Organisational procedures refer to documents that include – worksite rules, codes, and practices; equipment operating instructions; documented quality management systems; and health and safety requirements.
Work plan refers to instructions that may include work or service order, verbal instruction, formal work plan.

4 Assessment information
All activities and evidence must be in accordance with organisational procedures and work plan.

Outcomes and performance criteria

Outcome 1

Explain continuous welded rail.

Performance criteria

1.1 Continuous welded rail and its installation process is explained.

1.2 Installation requirements for continuous welded rail are explained.

Range sleepers, fastenings, rail, anchoring, ballast, formation, alignment, track geometry, insulated joints.

1.3 The purpose of de-stressing continuous welded rail is explained.

Outcome 2

Prepare to install rail in preparation for forming continuous welded rail.

Performance criteria

2.1 Safety requirements are followed.

Range personal protective equipment, tools and equipment, communication equipment.

2.2 Hazards are identified and control methods are implemented.

2.3 Rail permission systems are followed.

Range may include but is not limited to – track protection, permit, track access.

2.4 Work plan for the installation of rail is interpreted, and followed.

Range may include but is not limited to – removal of existing rail, installation method, work methods, staff required, welded track diagram, suitability of track for continuous welded rail.

2.5 Tools and equipment are selected, and pre-operational check is completed.

Range may include but is not limited to – mechanical handling/lifting equipment, track machines, hand/power tools, rail tensors, rail heaters, rail threaders, fastening equipment, cutting and boring equipment, rail swivel camp, rail non-swivel clamp.

2.6 Rail fastening systems are selected and checked.

Range may include but is not limited to – welds, fishplates, rail anchors, bolts, nuts, washers.

2.7 Rail to sleeper fastening systems are selected and checked.

Range may include but is not limited to – screwspikes, rail clips.

Outcome 3

Undertake installation of rail in preparation for forming continuous welded rail.

Performance criteria

3.1 Rails are measured and cut to required length.

3.2 If required, rails are crowed to the correct curvature to ensure correct track geometry is maintained.

3.3 Where necessary, existing rail is unfastened and removed.

3.4 Where materials are removed, they are stored or disposed of.

Range materials may be – reusable, unserviceable.

3.5 Rail is lifted into place in accordance with welded track diagram.

Outcome 4

Create rail joints in preparation for forming continuous welded rail.

Performance criteria

4.1 Measurements are taken to identify joint locations.

4.2 Rail ends are bored and squared, or prepared for welding.

4.3 Expansion gap is set.

4.4 Surfaces and component parts on bolted joints are checked.

Outcome 5

Install rail fastenings and adjust track parameters in preparation for forming continuous welded rail.

Performance criteria

5.1 Fastening or anchoring systems are installed.

5.2 Track parameters are checked, and if required, adjusted.

Range cant, top, alignment, gauge, ballast profile.

Outcome 6

Check work and complete documentation.

Performance criteria

6.1 Completed work is checked.

6.2 Required documentation is completed.

Planned review date	31 December 2026

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	24 February 2022	N/A

Consent and Moderation Requirements (CMR) reference	0013

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact the Hanga-Aro-Rau Manufacturing, Engineering, and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.