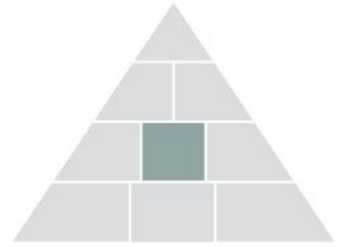


Specification



Civil – External Engineering Competence Management

MD-21-160

QUEENSLAND RAIL OFFICIAL

Approved for public release

Version: 1.0
Updated: 20/10/2021
Policy: Safety Policy



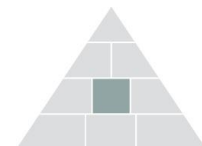
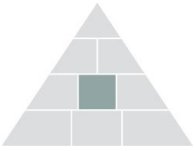


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1 Purpose

Queensland Rail collaborates with the private sector on a range of infrastructure projects. External Organisations providing engineering services to Queensland Rail are required to manage the competence of their engineering and technical staff.

This specification sets the expected organisational competency management capabilities to assure Queensland Rail that engineering services delivered by external organisations are:

- Fit for purpose,
- integrated with the existing rail system/s,
- delivered in a manner that is compliant with Queensland Rail's Safety Management System,
- and satisfy Queensland Rail's requirements.

1.1 Objective

The objective of this Specification is to assure Queensland Rail that only engineering staff with the appropriate knowledge, proficiency, and behaviours are engaged to perform specified activities within a specific engineering service area of discipline.

1.2 Scope

This specification covers all External Engineering Organisation's (EEO's) who carry out work in support of Queensland Rail's Track and Structures infrastructure. This includes employees, contractors and sub-contractors involved in the design, development, construction, testing, certification, commissioning, maintenance and decommissioning of Track and Structures infrastructure.

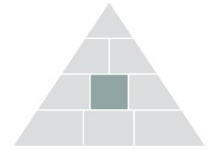
What constitutes Track and Structures Infrastructure is defined in Section 1.2.1.

This specification also defines roles within the track and structures discipline that hold additional duties as Rail Safety Workers.

1.2.1 Track and Structures Infrastructure

Track and Structures Infrastructure encompasses some, or all, of the following elements necessary for a railway to operate:

- Infrastructure clearances
- Track Geometry
- Bridges (including underbridges, overbridges, footbridges, subways)



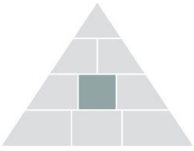
- Track sub-system of rail, sleepers and fasteners
- Turnouts, diamonds and special trackwork
- Rail welding and rail stress management
- Ballast and formation (including subgrade)
- Ballastless track systems
- Retaining walls
- Culverts
- Flooding and storm damage management recovery works
- Derailment prevention and containment measures
- Earthworks, embankments, cuttings, and drainage
- Slope stabilisation and rock fall protection
- Speed boards and operational signage
- At-grade level crossings and signage
- Under-bores and underground services
- OTV pads
- Rail maintenance access roads (RMAR) and provision for maintenance access.

The Track and Structures discipline interfaces with some, or all, of the following:

- Track formation and structures
- Existing and adjacent alignment
- Rollingstock
- Overhead line traction system (OHLE)
- Signalling infrastructure
- Wayside structures
- Other railways e.g. cane railway at-grade crossings, private sidings;
- Other transport modes e.g. road crossings, road traffic signals;
- Network maintenance staff
- Network operations management
- Passengers and staff at platforms
- Adjacent land owners
- Asset management
- Utilities (3rd party)
- 3rd party infrastructure in the rail corridor (e.g. conveyors, loaders)
- 3rd party operators.

For the purpose of this specification, the following elements are out of scope:

- Facilities
 - Stations. Platform marking, signage and station fittings are National Construction



- Code (NCC) issues and beyond the scope of the civil asset.
- Depots, wayside buildings, load outs
- Precincts, and other facilities are similarly out of scope for the track and structures asset apart from the risk of impacting the safe operation of rail traffic.
- Security. Security of stations, stabling yards and other facilities.

1.3 Assessment of External Engineering Organisation's (EEO)

Prior to being engaged by Queensland Rail, an EEO shall be endorsed by Queensland Rail against the competency management requirements of this specification.

EEO's shall submit evidence of meeting the requirements in this specification to EngineeringCompetency@qr.com.au.

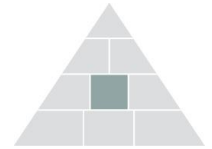
Queensland Rail will review the evidence supplied and respond within 10 business days as per below.

If Queensland Rail is satisfied that the information provided meets the requirements of this specification, Queensland Rail shall notify the EEO of the following:

- That they have been added to Queensland Rail's register of approved EEO's.
- The date the approval will expire (max. 5 years).
- Any conditions of the approval.
- The process for setting up RIW System Assessors.

If Queensland Rail is not satisfied that the information provided meets the requirements of this specification, Queensland Rail shall notify the EEO of the following:

- Additional information required to satisfy the requirements.



2 Requirements of this Specification

2.1 Overview

This section defines the specific competency management requirements that EEO's shall demonstrate prior to providing engineering services to Queensland Rail. The EEO's Competency Management System shall meet the following requirements:

- 1) An EEO shall have documented systems and processes in place for managing the competency of staff, contractors, sub-contractors.
- 2) An EEO shall have arrangements in place to assess the competence and proficiency of staff and maintain a register of approved competency assessors.
- 3) An EEO shall maintain records of competence management. All records shall be maintained for audit purposes and securely stored for the validity period of the competency certification.
- 4) An EEO shall maintain a register of all engineering services provided by staff and their competencies at the time they delivered the service.

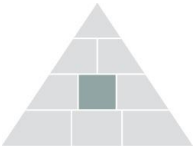
Section 2.1.1 – 2.1.4 provides guidance on possible methods, evidence and processes that an EEO may utilise to demonstrate their competence management procedure adequately addresses these requirements.

2.1.1 Requirement 1

An EEO shall have documented systems and processes in place for managing the competency of staff, contractors, sub-contractors.

The EEO is required to have a system in place for managing the competencies of all personnel engaged by them in the delivery of engineering services to Queensland Rail. This system will include assessment of the required knowledge, behaviours and skills required to deliver the engineering services.

The EEO may need to demonstrate how they will assure Queensland Rail that personnel involved on a specific task have the necessary knowledge, skills and behaviours to competently deliver the engineering services that are safe and meet Queensland Rail requirements.



Evidence that may be required to demonstrate compliance with this Requirement include:

- A Competency Management Plan that consistently manages competencies for the EEO. This system should reflect the size and nature of the services delivered by the EEO and should provide evidence of the competency for all personnel involved. The system should be traceable and auditable and include all components of the Competence Management System.
- A documented process detailing how the EEO assures the competencies of all parties in the supply chain, who may or may not work directly for the EEO (e.g., sub-contractors).

2.1.2 Requirement 2

An EEO shall have arrangements in place to assess the competence and proficiency of staff and maintain a register of approved competency assessors.

EEO's shall be able to demonstrate a documented process for ongoing assessment of the competence and proficiency of staff. This includes the following:

- Defining competence management functions and responsibilities relating to the assessment task
- Ensuring suitably qualified and experienced individuals are accountable for the assessment task.

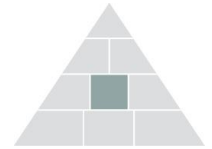
2.1.3 Requirement 3

An EEO shall maintain records of competence management. All records shall be maintained for audit purposes and securely stored for the validity period of the competency certification.

EEO's shall maintain current competency records for all personnel delivering engineering services for Queensland Rail. This should include:

- Employee details
- Qualifications and expiry dates
- Assessment records
- Evidence of competency (e.g. design reports or plans, interviews, log books, references).

Records should also be maintained such that the EEO can assure Queensland Rail that the competence of sub-contractors or suppliers downstream in the supply chain are also appropriately managed.



2.1.4 Requirement 4

An EEO shall maintain a register of all engineering services provided by staff, and the competency at the time they delivered the service.

The EEO shall maintain a register of all engineering services provided to Queensland Rail detailing the roles, responsibilities, and competencies of the personnel at the time the service was undertaken. The purpose of the register is to provide an auditable record of staff, the competencies they have been assessed as holding, and the assessed proficiency levels at the time they undertook the engineering service for Queensland Rail.

The register should contain the following minimum information:

- Employee details
- Job role and function (e.g., Structural Design Engineer, RPEQ, Design Certifier)
- Assessed competencies and proficiency levels
- Assessment dates and validity period
- Any functions or duties that require specific proficiency levels or certifications (e.g., RPEQ, RIW, Certification duties)

2.2 Audit/ Assurance

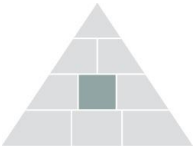
Assurance of Queensland Rail's operations is reliant on the competency of the personnel responsible for designing, constructing, certifying and maintaining all elements of the system across all stages of the asset lifecycle.

Queensland Rail may audit an approved EEO's compliance with their endorsed Competency Management System at any time.

2.3 Responsibilities

EEO's shall ensure all employees, contractors, and sub-contractors delivering engineering services for Queensland Rail are competency assessed in accordance with the EEO's endorsed Competency Management System.

EEO's shall ensure staff are competent in accordance with Queensland Rail requirements, including the requirements of this specification, before commencing work on Queensland Rail infrastructure.



2.4 Rail Safety Worker roles

In addition to the requirements for all workers to comply with the applicable competency management system of the EEO, workers who are required to undertake certification and/or verification activities for Queensland Rail that have the potential to affect the safety of the railway are required to be assessed as Rail Safety Workers in the Rail Industry Worker (RIW) System, as these roles have additional duties under Rail Safety National Law.

Queensland has adopted the Rail Industry Worker (RIW) System to record all evidence requirements for the Rail Safety Worker roles.

Table 2 outlines the RIW roles that need to be held for certification activities.

The EEO is responsible for assessing employees for required RIW roles.

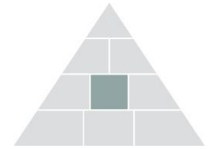
The EEO is responsible for managing the specific skills and area of competence for each RIW. For example, an RIW 'Design Certifier' shall only certify designs within their area of competence, where they have undertaken the work, or directly supervised others as required by the Professional Engineers Act.

Evidence of competence for Rail Industry Workers will be shown in the RIW system through the RIW holding valid job role/s as applicable to the rail safety work intended to be performed.

2.4.1 RIW Competency Assessment Process

Competency Assessment for RIW roles shall be undertaken by the EEO. The process for undertaking the assessment is as follows:

- 1) The RIW system Employer Administrator is to select and submit the relevant competencies (and evidence file/s) along with the job roles on behalf of the RIW for assessment/verification as applicable
- 2) The nominated EEO Assessor receives a workflow notification and will either approve or reject the assessment based on the standard set for intended rail safety work
- 3) If the job role/s are approved, they will be shown as valid in RIW system
- 4) If the job role/s are rejected the affected job roles will show as invalid
- 5) Job roles will also go to invalid if competencies associated with the job role expire post the assessment.



2.5 Sole traders

Competency management of Sole Traders is the responsibility of the individual.

Queensland Rail will undertake the RIW assessment process for Sole Traders who apply through the RIW system for RIW roles.

2.6 Competency Assurance and Audits

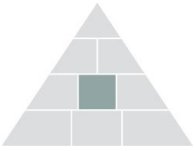
Queensland Rail has adopted the Rail Industry Worker System to record all evidence requirements for the RIW roles.

This provides Queensland Rail with full traceability of all RIW's competencies for the rail safety work being undertaken. This then forms the basis of Queensland Rail's audits against RIW's, whether periodically to maintain quality, as a result of an alleged incident/breach or when Queensland Rail has reason to suspect the RIW's competence is invalid.

It is mandatory for all RIW's to hold a valid RIW Card on their person whilst undertaking rail safety work for Queensland Rail. When approached by a Queensland Rail auditor / authorised person, the RIW shall present their RIW Card for checking of compliance against the role requirements (qualifications/competencies) within the RIW System. Where a RIW is found to not hold the necessary competencies / authorisations for the work being undertaken, the RIW shall be escorted from the worksite (if on Queensland Rail property). This shall initiate an investigation by Queensland Rail and may result in a suspension of the RIW for that or all roles the RIW holds and prevent the RIW from undertaking rail safety work for Queensland Rail.

The investigation of an incident and/or breach shall be in accordance with the Queensland Rail Business Rules for Management of Rail Safety Worker Contractors, Rail Safety Work Standard and Determining Requirements for Rail Safety Workers Guideline.

Queensland Rail may undertake an audit of any or all evidence in support of a RIW's classification. The audit may request further information from the RIW. Where deficiencies are identified, the RIW shall be required to provide additional information within a reasonable time. In support of this requirement, Queensland Rail reserves the right to suspend individual job role or roles or place a 'block' against the individual's profile in the Rail Industry Worker System until such deficiencies are rectified. This shall prevent the RIW from undertaking all rail safety work for Queensland Rail specific to that classification.



2.7 Reassessments

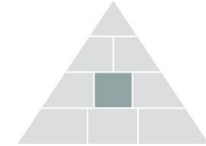
All RIW's with one or multiple job roles assessed shall be required to resubmit for reassessment prior to the end of the validity (expiry) period of each role (i.e., reassessed before the job role expires).

A RIW with an expired role shall not undertake rail safety work for those roles with expired competencies until the deficiencies have been rectified.

2.8 Implementation of this specification

The requirements of this specification will be introduced in accordance with the below principles:

- Project that are 'in-flight' and with contracts executed prior to 1st April 2022 are exempt and are not required to meet the requirements of this specification.
- Projects executed on, or after, 1st April 2022 shall comply with this specification.

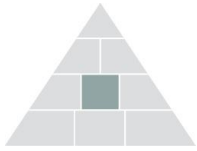


2.9 Rail Industry Worker (RIW) roles

Table 2: Matrix of RIW Roles and Competencies for External Engineering Categories

| Category | Role | Role Responsibilities | Competence Required | Evidence Required |
|---------------------|---|---|---|--|
| Design | Senior Design Engineer <i>(RIW role – Design Certifier)</i> | Responsible for design certification of track and/ or structures infrastructure while interpreting and complying with standards. Accountable for the final sign-off of track and structures designs. | Degree in civil engineering or equivalent engineering qualification which is acceptable for corporate membership of Engineers Australia Registered Professional Engineer Queensland (RPEQ) accreditation 10+ years of experience in track and or structures design. | Certified copy of Qualification Certified copy of RPEQ Certificate and evidence of currency Resume/Portfolio of Evidence |
| Construction | Senior Construction Engineer <i>(RIW role – Construction Certifier)</i> | Responsible for construction certification of track and/or structures infrastructure, while interpreting and complying with standards. | Degree in civil engineering or equivalent engineering qualification which is acceptable for corporate membership of Engineers Australia Registered Professional Engineer Queensland (RPEQ) accreditation 10+ years of experience in track and or structures construction. | Certified copy of Qualification Certified copy of RPEQ Certificate and evidence of currency Resume/Portfolio of Evidence |

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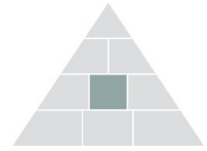


3 Terms and definitions

The following key terms and definitions are unique to this Procedure. Please refer to the Business Glossary for other terms not included in this section.

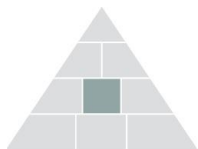
| Term | Definition | Source ¹ |
|--|---|---|
| Australian Qualifications Framework (AQF) | The national policy for regulated qualifications in Australian education and training. | |
| Certified Copies | Copies of documents which are confirmed as true copies of the originals, by a person authorised to do so. | |
| Competency | The possession and application of both knowledge and skills that correspond to relevant workplace requirements and other vocational needs. | |
| Direct Supervision | Direct supervision is when the supervisor has direct contact with the supervisee and actual knowledge of the work or professional engineering service being provided. | |
| Overbridge | A bridge crossing over a railway, railway land, or railway corridor. | |
| Professional Engineering Service | An engineering service that requires, or is based on, the application of engineering principles and data to a design, or to a construction, production, operation or maintenance activity, relating to engineering, and does not include an engineering service that is provided only in accordance with a prescriptive standard. | Queensland Professional Engineers Act 2002 (The Act). |
| Rail Industry Worker (RIW) | Rail Industry Worker means an individual who carries out rail safety work under the National Rail Industry Worker Program for which Queensland Rail is a member. | |
| Rail Industry Worker (RIW) Card | The card used to identify each RIW. | |
| Rail Industry Worker System | Refers to the Queensland Rail approved external provider of the competency management system for contractors to demonstrate compliance against Queensland RAILS requirements. The provider also issues RIW Cards via the system. | |
| Rail Safety Work | Work as defined by the Rail Safety National Law (South Australia) Act 2012. | Rail Safety National Law (South Australia) Act 2012 |
| Recognition of Prior Learning (RPL) | Recognition including recognition of prior learning (RPL) is a process for giving candidates credit for skills, knowledge and experience gained through working and learning. | |

¹ Where left blank, Source is not applicable.



| Term | Definition | Source ¹ |
|---|---|---------------------|
| Registered Professional Engineer Queensland (RPEQ) | <p>The Queensland Government Professional Engineers Act 2002 (the Act) requires professional engineers to register with the Board of Professional Engineers before they can provide the engineering services defined in the Act.</p> <p>The only exception is for persons who practise under the direct supervision of RPEQs.</p> <p>Note that in all cases, the professional engineering service must be provided within the RPEQ’s area of competency as defined under the Act.</p> | |
| Underbridge | <p>A bridge structure supporting the track.</p> | |

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4 Document history

Document Information

| | |
|---------------------------|--|
| Current Version | 1.0 |
| First Released | 20 October 2021 |
| Last Updated | 20 October 2021 |
| Review Frequency | Every 5 years |
| Review Before | 20 October 2026 |
| Document Authoriser | Chief Executive Officer (CEO) |
| Functional Owner | Track and Structures Discipline Head |
| Document Owner / Approver | Track and Structures Discipline Head |
| Content Developer* | Track and Structures Discipline Head |
| Review Stakeholders | Track & Civil Engineering, Chief Engineer, Rail Accreditation, People Capability & Analytics and External Organisations. |
| Audience | All employees, contractors and consultants undertaking Track and Structures work. Employees include supervisors and managers with responsibilities for Track and Structures. |

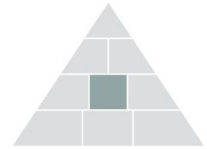
*Contact for further information

Document Amendment History

| Version | Date | Section(s) Amended | Summary of Amendment |
|---------|------------|--------------------|----------------------|
| 1.0 | 20/10/2021 | New | First release |

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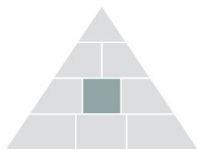
5 Responsibilities

The following table establishes the responsibilities of internal Queensland Rail stakeholders specific to this Specification.

5.1 Who does what?

| Who | What |
|---|---|
| Discipline Head Track and Structures | Authorise External Engineering Organisations. Undertake RIW assessment of Sole Traders. |
| Asset Planning and Engineering | Maintain register of approved External Engineering Organisations. Coordinate review of applications from External Engineering Organisations in accordance with this specification. |
| RTO & Learning Governance | Set up RIW roles in the RIW system in accordance with this specification. |

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6 Appendices

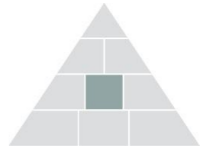
Appendix 1 – Related documents

Legal, regulatory and other obligation sources

| Jurisdiction | Title |
|---|---|
| Commonwealth | N/A |
| State | Rail Safety National Law (Queensland) Act 2017 Rail Safety National Law (Queensland) Regulation 2017 Rail Safety National Law (South Australia) Act 2012 Transport Infrastructure Act 1994 Work Health and Safety Act 2011 Work Health and Safety Regulation 2011 Professional Engineers Act 2002 |
| Other (Voluntarily adopted by Queensland Rail) | N/A |

Queensland Rail documents

| Document type | Document title |
|----------------------------------|---|
| Principle | MD-10-69 <u>Safety Policy</u> |
| Standard | MD-20-390 <u>Rail Safety Work</u> |
| Strategy / Plan | N/A |
| Specification / Framework | MD-16-675 <u>Track and Structure Competency Management Specification</u> |
| Procedure | MD-13-79 <u>Business Rules for Management of Rail Safety Worker Contractors</u> |
| Instruction | N/A |
| Guideline | MD-20-392 <u>Determine Requirements for Rail Safety Workers</u> |
| Form / Template | N/A |



Appendix 2 – Track & Structures Engineering RIW Matrix

| Engineering Services | | Design Certification | Construction Certification |
|---|--|----------------------|----------------------------|
| Minimum Essential Education and Training | Rail Safety Work Descriptor | Design Certifier | Construction Certifier |
| | Certified current CV/Resume - Record of relevant experience - to be assessed by a nominated Assessor for relevance to the role | M | M |
| | Degree in engineering or equivalent engineering qualification in relevant field | M | M |
| | Registered Professional Engineer of Queensland (RPEQ) accreditation | M | M |
| Queensland Rail specific requirements | | | |
| QR - Working in Electrified Territory (WET) - this role is to be selected from the Trackside Safety Competency Matrix if you are required to work in the 25kV electrified territories | | M | M |
| QR - Temporary Traction Bonding - this role is to be selected from the Electrical Traction Competency Matrix if you are required to work in the 25kV electrified territory | | M | M |
| QR - Working in the rail corridor - this role is to be selected from the Trackside Safety Competency Matrix if you are required to work in the rail corridor | | M | M |
| QR – Network Lockout – this role is to be selected from the Trackside Safety Competency Matrix if you are working within the danger zone | | M | M |

Important Notes

- If the contractor is required to work within the rail corridor, they are also required to select the Queensland rail role of 'Working in the rail corridor' role contained within the Trackside Safety Competency Matrix. This role requires a Category 3 Me
- If the contractor is required to work in the electrified territory, they are also required to select the Queensland Rail role of Working in Electrified Territory (WET) and Temporary Traction Bonding contained within the Trackside Safety Competency Matrix. This competency generally c
- Note that Transport (Rail Safety) Act imposes additional duties to those obligations already imposed under the WH&S Act. It does not replace or modify WH&S obligations.
- Please refer to MD-13-79 - Business Rules for Management of Rail Industry Worker Contractors for information relating to requirements for "National Health Assessment"
- The RIW card does not provide authority to gain access to the corridor or construction sites.

Please note: competencies list is the current competency. There may be one or more equivalent competencies available or held that are still acceptable.