

40424**Check the functionality of operating passenger ropeway systems**

Kaupae Level	3
Whiwhinga Credit	15
Whāinga Purpose	<p>This skill standard is designed for people working in the passenger ropeway sector. This skill standard will equip people with knowledge of safety protocols and the ability to check the functionality of passenger ropeway systems, including drive and return stations, control systems, towers, line equipment, and carrier systems.</p> <p>This skill standard may be used in programmes leading to qualifications and micro-credentials at Level 3 and above in passenger ropeway systems and maintenance.</p>

Hua o te ako me Paearu aromatawai | Learning outcomes and assessment criteria

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
1. Explain the components, purpose and differences of passenger ropeway systems.	a. Identify the components and explain their purpose for passenger ropeways.
	b. Explain the difference between fixed and detachable ropeway systems.
	c. Explain the importance of tensioning and braking systems.
	d. Explain environmental hazards such as wind, lightning, and ice and their impact in the safe operation of passenger ropeways.
2. Explain protocols and actions required for emergency situations related to passenger ropeways.	a. Explain passenger ropeways emergency and evacuation procedures.
	b. Explain the roles and responsibilities of staff members during emergency situations.
	c. Explain the communication procedures for coordinating emergency responses.

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
<p>3. Check the functionality of the drive and return stations enhancing operational safety and efficiency.</p>	a. Explain the function, components and operation of drive stations and the safety features.
	b. Explain the function, components and operation of return stations and the safety features.
	c. Carry out safety protocols and procedures related to station operations.
	d. Check the functionality of the drive and return stations.
<p>4. Check the functionality of the passenger ropeway control systems, enhancing operational safety and efficiency.</p>	a. Describe different types of control systems used in passenger ropeways, their components and their function.
	b. Explain how the components interact within a control system to achieve desired control actions and outcomes.
	c. Check the functionality of the passenger ropeway control systems.
<p>5. Check the functionality of the towers and line equipment used in passenger ropeways, enhancing operational safety and efficiency.</p>	a. Describe the type of towers used in passenger ropeways, their components and explain their purpose.
	b. Identify types of line equipment and explain their specific functions.
	c. Describe the safety standards and maintenance requirements for towers and line equipment.
	d. Check the functionality of the towers and line equipment.
<p>6. Check the functionality of the passenger ropeway carrier systems, enhancing operational safety and efficiency.</p>	a. Describe different types of carriers used in passenger ropeways, their components and features.
	b. Explain the safety features and protocols associated with different carrier systems.
	c. Check the functionality of the passenger ropeway carrier systems.

Pārongo aromatawai me te taumata paearu | Assessment information and grade criteria

Assessment specifications:

Evidence for assessment may include participation in simulated or real-world scenarios to assess practical application of skills.

Definition:

Check functionality refers to verifying that a system, component, or equipment operates as intended and performs its designed tasks effectively and safely. This involves assessing the operational performance of mechanical, electrical, for passenger ropeway control systems, drive and return stations, control systems, towers and line equipment, and carrier systems, ensuring that all functions meet manufacturer specifications, industry standards, and regulatory requirements. The purpose of checking the functionality of passenger ropeway systems is to confirm readiness for use, detect issues requiring maintenance or adjustment, and ensure reliability and safe operation.

Ngā momo whiwhinga | Grades available

Achieved.

Ihirangi waitohu | Indicative content

Carrier systems such as – cabins/gondolas, chairs, grips, suspension systems, doors and safety bars.

Control measures such as – lockouts, safe zone.

Control system components such as – controllers (e.g. programmable logic controller, relay logic), sensors, actuators, control algorithms, feedback loops, setpoints, communication interfaces, power supplies, human-machine interfaces (HMI), safety and emergency shutdown systems.

Environmental hazards such as – lightening, wind and ice.

Drive station components such as – drive motor (electric, diesel, or hydraulic motors), control system, gearbox, bullwheel, braking systems, control panel, tensioning system, power supply and backup, cooling system, communication system, safety and surveillance systems.

Return station components such as – sheave or bullwheel, tensioning systems, station platforms.

Stations safety systems such as – emergency stop, rope position detectors, speed monitors, carrier detectors, automatic tension monitoring, back-up power communication systems, surveillance cameras, fire suppression systems, drive motor protection systems, gearbox safety systems, braking safety systems, electrical safety systems, control systems safeguards, drive sheave/bullwheel safety systems.

Line equipment such as – haul ropes, towers and supports, sheaves and sheave assemblies.

Rauemi | Resources

Legislation, regulations and/or industry standards:

- Electricity Act 1992 <https://www.legislation.govt.nz/act/public/1992/0122/latest/DLM281858.html>.
- Electrical Safety Regulations 2010. Particular attention to Schedule 1, prescribed electrical work. Section 43, Isolation fittings for works. <https://www.legislation.govt.nz/regulation/public/2010/0036/latest/dlm2763501.html>.
- Health & Safety at Work Act 2015 <https://www.legislation.govt.nz/act/public/2015/0070/latest/DLM5976660.html>.
- Pressure Equipment, Cranes and Passenger Ropeways Regulations 1999 (PECPR) <https://www.legislation.govt.nz/regulation/public/1999/0128/latest/DLM284452.html>.

- NZS 8635:2018 Passenger ropeways and passenger conveyors, available at <https://www.standards.govt.nz/shop/nzs-86352018>.
- Manufacturers' specifications.
- Workplace operation procedures.

Pārongo Whakaū Kounga | Quality assurance information

Ngā rōpū whakatau-paerewa Standard Setting Body	Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council
Whakaritenga Rārangi Paetae Aromatawai DASS classification	Engineering and Technology>Mechanical Engineering > Maintenance and Diagnostics in Mechanical Engineering
Ko te tohutoro ki ngā Whakaritenga i te Whakamanatanga me te Whakaōritenga CMR	0013

Hātepe Process	Putanga Version	Rā whakaputa Review Date	Rā whakamutunga mō te aromatawai Last date for assessment
Rēhitatanga Registration	1	30 January 2025	NA
Kōrero whakakapinga Replacement information	N/A		
Rā arotake Planned review date	31 December 2029		

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