41094 Perform friction testing of airport runways

Kaupae | Level	4
Whiwhinga | Credit	5
Whāinga | Purpose	People credited with this skill standard are able to perform friction testing of airport runways, ensuring a focus on safety, compliance, coordination, and communication.

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

Hua o te ako | Learning outcomes	**Paearu aromatawai |** Assessment criteria
1. Perform friction testing of airport runways.	a. Conduct testing to establish baseline friction values.
	b. Identify variation factors that affect friction values.
	c. Document and report results of friction testing.

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

Assessment specifications:

Baseline friction values should be obtained through two runs.at 65 kph and 95 kph.

Variation factors that influence friction values could include wear on friction-testing measuring tyre, air and pavement temperature.

Assessments must be conducted in an active airport environment to ensure practical application to reflect the standards of an aviation workplace.

Evidence presented for assessment against this skill standard must be in accordance with enterprise procedures.

Definitions:

Aerodrome means any defined area of land or water intended or designed to be used either wholly or partly for the landing, departure, and surface movement of aircraft; and includes any building, installations, and equipment on or adjacent to any such area used in connection with the aerodrome or its administration.

Airport refers to aerodrome as per Civil Aviation Rules.

Reference to *enterprise procedures* means that all activities must comply with the requirements contained in the current airport exposition, current airport company manuals and procedures, and any relevant legislative and/or regulatory requirements, which may include but are not limited to: Civil Aviation Act 2023, relevant Civil Aviation Rules, New Zealand Defence Force (NZDF) Policy.

Ngā momo whiwhinga \| *Grades available*

Achieved

Ihirangi waitohu | Indicative content

Concepts and principles of friction and friction testing

- Definition and role of friction in aircraft braking and runway safety.
- Types of friction relevant to aerodrome pavements (e.g. static, kinetic).
- Principles of skid resistance and how it relates to aircraft performance.
- Overview of friction testing devices (e.g. Mu-Meter, GripTester).
- How devices simulate braking action and measure friction levels.
- International and national standards for friction testing.

Conducting friction testing to establish baseline values

- Enterprise procedures for accessing runways safely and legally.
- Establishing calibration strips: location, surface conditions, and contamination control.
- Test protocols: speed requirements (e.g. 65 kph and 95 kph), number of runs, data consistency.
- Equipment calibration and verification procedures.
- Recording and processing test results using enterprise systems.
- Safety and communication protocols during testing operations.

Friction measurement variables and variation factors affecting friction values

- Friction measurement variables: operator, equipment calibration and maintenance, test procedure, runway conditions, braking methods, compliance with existing standards.
- Operator-related variables: technique, experience, and consistency.
- Equipment factors: calibration, maintenance, tyre wear, and device type.
- Environmental conditions: air and pavement temperature, moisture, contaminants.
- Runway surface characteristics: texture, rubber deposits, moss/lichen, camber, drainage.
- Braking methods and aircraft type considerations.
- Standards compliance and interpretation of friction values.
- Analytical techniques for identifying anomalies and recommending remedial actions.

Post-test procedures and remedial actions

- Identifying and addressing drainage deficiencies (e.g. (pooling, poor runoff).
- Handling friction reduction due to spills (e.g. fuel, hydraulic fluid).
- Rubber removal techniques: mechanical, chemical, high-pressure water.
- Re-testing procedures and comparison against prescribed standards.
- Documentation and reporting requirements under enterprise and regulatory frameworks.

Rauemi | Resources

CAA Advisory Circular AC139-3 Aerodrome Inspection Programme and Condition Reporting

CAA Advisory Circular AC139-5 Operational Safety During Works on Aerodromes

CAA Advisory Circular AC139-9 Notification of aerodrome data and information

CAA Advisory Circular AC139-10 Control of Obstacles

CAA Advisory Circular AC139-13 Aerodrome Maintenance – Runway Surface Friction Characteristics and Friction Testing

Civil Aviation Rule Part 139 Aerodromes – Certification, Operation and Use

NOTAM Guidelines for Operators and Originators

Enterprise procedures.

Pārongo Whakaū Kounga | Quality assurance information

Ngā rōpū whakatau-paerewa | Standard Setting Body	Ringa Hora Services Workforce Development Council
Whakaritenga Rārangi Paetae Aromatawai | DASS classification	Service Sector > Aviation > Airport Operations
Ko te tohutoro ki ngā Whakaritenga i te Whakamanatanga me te Whakaōritenga | CMR	0112

Hātepe | Process	**Putanga |** Version	**Rā whakaputa |** Review Date	**Rā whakamutunga mō te aromatawai |** Last date for assessment
Rēhitatanga | Registration	1	18 December 2025	N/A
Kōrero whakakapinga | Replacement information	This skill standard replaced unit standard 11668.		
Rā arotake | Planned review date	31 December 2030		

Please contact Ringa Hora Services Workforce Development Council qualifications@ringahora.nz to suggest changes to the content of this skill standard.