

<b>Title</b>	<b>Quantify and validate the uncertainty of measurement in test results in a civil engineering laboratory</b>		
<b>Level</b>	<b>5</b>	<b>Credits</b>	<b>5</b>

<b>Purpose</b>	People credited with this unit standard are able to quantify and validate the uncertainty of measurement in test results in a civil engineering laboratory.
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<b>Classification</b>	Infrastructure Civil Engineering > Infrastructure Laboratory
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable organisational and legislative requirements.
- 2 References  
Civil Engineering Testing Association of New Zealand. *Uncertainty calculation sheet* available at <https://www.cetanz.org.nz/index-cfmppublications>;  
ISO/IEC Guide 98-3:2008. *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement* available at <https://standards.govt.nz>.
- 3 Definition  
*Organisational requirements* refer to instructions to staff on policy and procedures which are formally documented or generally accepted at the worksite. This may include legislation; industry standards and methods; national and international standards and methods; standard operating procedures; specifications; manuals; and manufacturer's information.

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### Outcomes and performance criteria

Quantify and validate the uncertainty of measurement in test results in a civil engineering laboratory.

#### Outcome 1

- 1.1 The purpose of establishing measurement uncertainty is explained as it relates to testing materials in a civil engineering laboratory.
- 1.2 Contributing factors to measurement uncertainty are explained.
- 1.3 Uncertainty of measurement calculator is explained in terms of how it is used in the evaluation of results.

- 1.4 Measurements are expressed with uncertainties generated on the calculation sheet or equivalent method.

Range evidence is required for three different tests.

- 1.5 Uncertainties are validated.

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<b>Planned review date</b>	31 December 2025
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**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	23 January 2020	N/A
Rollover and Revision	2	24 October 2024	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0101
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

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**Comments on this unit standard**

Please contact Waihanga Ara Rau Construction and Infrastructure Workforce Development Council [qualifications@waihangaararau.nz](mailto:qualifications@waihangaararau.nz) if you wish to suggest changes to the content of this unit standard.