

<b>Title</b>	<b>Apply mathematical methods to testing in a civil engineering laboratory</b>		
<b>Level</b>	<b>3</b>	<b>Credits</b>	<b>4</b>

<b>Purpose</b>	People credited with this unit standard are able to apply mathematical methods to testing 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 Assessment against performance criterion 1.1 must be based on evidence from a laboratory spreadsheet. Evidence for the balance of Outcome 1 must include working formulae.
- 2 Definition  
*Spreadsheet* refers to an automatically calculating input/output worksheet such as Microsoft Excel, Laboratory Information Management System (LIMS), programmable calculator, or other software programmes.

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### Outcomes and performance criteria

#### Outcome 1

Apply mathematical methods to testing in a civil engineering laboratory.

#### Performance criteria

- 1.1 Laboratory spreadsheet data is validated using manual calculations.  
Range spreadsheets from three different test methods.
- 1.2 Physical quantities are calculated and expressed in metric and imperial units.  
Range physical quantities – area, volume, density, force, stress; four different units showing working formulae.

1.3 Calculations of statistical information are performed from inter-lab proficiency test data.

Range statistical information includes but is not limited to – mean, standard deviation, mode, median, range; one inter-lab proficiency test.

1.4 A distribution plot is produced from inter-lab proficiency test data.

<b>Planned review date</b>	31 December 2024
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#### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	19 February 2015	31 December 2021
Review	2	23 January 2020	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>.

#### Comments on this unit standard

Please contact Connexis - Infrastructure Industry Training Organisation [qualifications@connexis.org.nz](mailto:qualifications@connexis.org.nz) if you wish to suggest changes to the content of this unit standard.