

<b>Title</b>	<b>Demonstrate knowledge of the materials used in road formation</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>10</b>

<b>Purpose</b>	People credited with this unit standard are able to: describe materials used during road formation; demonstrate knowledge of material compaction; and demonstrate knowledge of testing of materials used in road formation.
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<b>Classification</b>	Infrastructure Works > Road Construction
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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 relevant legislative and industry requirements.
- 2 Legislation relevant to this unit standard includes: Health and Safety at Work Act 2015; and all subsequent amendments and replacements.
- 3 Definition  
*Industry requirements* refer to relevant policies, processes, methodologies, industry codes of practice, site specific health and safety plans, standard operating procedures, site safety plans, quality plans, work plans, traffic management plans, contract work programmes, job safety analysis, safe work method statements, job instructions, manufacturer's requirements, contract specifications, manuals, procedural documents.

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### Outcomes and performance criteria

#### Outcome 1

Describe materials used during road formation.

#### Performance criteria

- 1.1 Local materials used in road formation are described.
- 1.2 Unsuitable materials for road formation are described in accordance with local conditions.
- 1.3 Likely cut-and-fill materials are described in accordance with local conditions.
- 1.4 Subgrade materials are described in accordance with and local conditions.

- 1.5 Sub-base materials are described in accordance with and local conditions.
- 1.6 Base course materials are described in accordance with and local conditions.
- 1.7 Geotextile filters are described in terms of suitability for the site.
- 1.8 Filter materials are described in accordance with local conditions.
- 1.9 Bedding materials are described in accordance with local conditions.
- 1.10 Quarried material is described in terms of its origin and use.  
Range material includes – river, hardrock, pit.

**Outcome 2**

Demonstrate knowledge of material compaction.

**Performance criteria**

- 2.1 The Optimum Moisture Content is identified in accordance with material compaction.
- 2.2 Maximum Dry Density is described in terms of the degree of compaction as measured by density.
- 2.3 Plant is described in terms of achieving optimum compaction of materials.  
Range plant includes – rubber, steel, vibrating, sheepsfoot, grid rollers;  
material includes – asphalt, base course, clay, rock.

**Outcome 3**

Demonstrate knowledge of testing of materials used in road formation.

**Performance criteria**

- 3.1 Tests are identified and described for earthworks and subgrade.  
Range tests include – Scala penetrometer, nuclear densometer, Benkleman beam.
- 3.2 Tests are identified and described for sub-base and base course.  
Range tests include – grading, crushed-face, Clegg hammer, Benkleman beam, nuclear densometer.

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<b>Planned review date</b>	31 December 2026
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**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	21 December 1998	31 December 2014
Review	2	30 May 2000	31 December 2014
Review	3	25 September 2006	31 December 2016
Review	4	19 February 2015	31 December 2023
Review	5	30 September 2021	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.