

Title	Demonstrate basic knowledge of engineering materials		
Level	2	Credits	2

Purpose	People credited with this unit standard are able to, in terms of engineering materials, demonstrate basic knowledge of the production of engineering materials; compare physical characteristics of engineering materials; and identify the selection factors and applications of engineering materials.
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Classification	Mechanical Engineering > Engineering - Materials
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Available grade	Achieved
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Guidance Information

- 1 Definition
Primary raw materials – include basic and fundamental compounds, elements, and agents used to produce engineering materials.
- 2 Assessment information
This unit is intended to cover entry level knowledge of engineering materials, to establish a foundation knowledge base.
- 3 Range
Engineering materials – wood, metal, concrete, polymers.

Outcomes and performance criteria

Outcome 1

Demonstrate basic knowledge of the production of engineering materials.

Performance criteria

- 1.1 The primary raw materials used in the production of engineering materials are identified.
- 1.2 Key process steps in the production of engineering materials are identified.

Outcome 2

Compare physical characteristics of engineering materials.

Performance criteria

2.1 Engineering materials are compared qualitatively in terms of their physical characteristics.

Range physical characteristics– machinability, weldability, hardenability, malleability, ductility, durability, thermal conductivity, electrical conductivity, surface texture / finish, strength, density, hardness, lustre, colour, melting point, wear resistance.

Outcome 3

Identify the selection factors and applications of engineering materials.

Performance criteria

3.1 Common applications of engineering materials are identified.

Range two applications for each engineering material.

3.2 Factors influencing the selection of materials are identified.

Range may include but is not limited to – cost, availability, preparation time, appropriateness for job, ease of working, job specifications, mechanical properties, machine capability; Mechanical properties, appropriateness for job, and at least one other factor are required.

Replacement information	This unit standard has been replaced by unit standard 29549.
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This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	26 July 2004	31 December 2014
Review	2	17 June 2011	31 December 2014
Revision	3	17 November 2011	31 December 2021
Review	4	8 December 2016	31 December 2021
Rollover	5	16 December 2021	31 December 2022

Consent and Moderation Requirements (CMR) reference	0013
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.