

Title	Take and record measurements and make calculations in wood manufacturing		
Level	2	Credits	3

Purpose	People credited with this unit standard are able to: take and record measurements used in wood manufacturing; calculate quantities from measurements; calculate specific wood manufacturing parameters using formulae; and estimate measurements of identified wood manufacturing products.
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Classification	Wood Manufacturing - Generic Skills > Wood Manufacturing Foundation Skills
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Available grade	Achieved
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Guidance Information

- 1 Legislation
Health and Safety at Work Act 2015.
Resource Management Act 1991.

- 2 Definitions
Accepted industry practice refers to approved codes of practice and standardised procedures accepted by the wider wood manufacturing industry as examples of best practice.
Identified wood manufacturing products refers to solid wood, pulp and paper, wood panels, or wood product manufacturing products identified by the assessor.
Wood manufacturing refers to solid wood, pulp and paper, wood panels, or wood product manufacturing.
Workplace procedures refer to documented policies and procedures set by the organisation carrying out the work, and to documented or other directions provided to staff, and applicable to the tasks being carried out. They may include but are not limited to – standard operating procedures, site specific procedures, site safety procedures, equipment operating procedures, quality assurance procedures, product quality specifications, references, approved codes of practice, housekeeping standards, environmental considerations, on-site briefings, supervisor’s instructions, and procedures to comply with legislative and local body requirements relevant to the wood manufacturing sector.

- 3 Assessment information
All activities and evidence must meet workplace procedures and accepted industry practice.

Outcomes and performance criteria

Outcome 1

Take and record measurements used in wood manufacturing.

Range at least eight units of measurement, including at least one from each of length, mass, and time;
length – m, cm, mm;
mass – tonne, kg, g;
time – hours, minutes, seconds;
temperature – degrees celsius.

Performance criteria

- 1.1 The measurement device is selected.
- 1.2 Measurement is made to an appropriate degree of accuracy and recorded.

Outcome 2

Calculate quantities from measurements.

Range area, volume, speed;
evidence is required of at least three of – ratio, percentage, average, relative humidity, moisture content, sawmill conversion.

Performance criteria

- 2.1 Calculation appropriate to the quantity or product is carried out.
- 2.2 The calculated quantity is checked for consistency with the measurements used.
- 2.3 Results of calculations are presented to a level of accuracy appropriate to the situation.

Outcome 3

Calculate specific wood manufacturing parameters using formulae.

Performance criteria

- 3.1 Formulae are manipulated and applied to calculate wood manufacturing parameters.

Range wood manufacturing parameters may include but are not limited to – log volume, knot area ratio, feed speed, moisture content, chemical concentrations, lineal content of timber packets, sawmill conversion, weight/volume ratios log conversion, sheet density, panel density, wood density (green and basic), chip packing density, sheet grammage, modulus of rupture, energy consumption, burst index,

tear index, kappa number, furnish freeness, tensile index, chemical addition rate, percent chemical on fibre, panel area, panel volume, chemical ratios;
evidence is required for five formulae.

Outcome 4

Estimate measurements of identified wood manufacturing products.

Range wood manufacturing products may include but are not limited to – pieces of timber; packets of: timber, wooden components, posts, poles, or wood panels; wood veneer; chips; sawdust; wood shavings; laminated products; finger jointed products; bales of pulp; rolls of paper; pallets of tissue products.

Performance criteria

4.1 Measurements are estimated for identified wood manufacturing products.

Range estimates should include an example for – length, volume, weight; estimates must be accurate within +/- 25%.

Planned review date	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	18 December 2006	N/A
Review	2	28 May 2020	N/A

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>.

Comments on this unit standard

Please contact Competenz qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.