Title	**Demonstrate knowledge of properties of wood**		
Level	**3**	**Credits**	**10**

Purpose	People credited with this unit standard are able to demonstrate knowledge of: physical properties of wood; permeability in wood; and density and moisture content in wood.

Classification	Wood Manufacturing - Generic Skills > Wood Manufacturing Foundation Skills

Available grade	Achieved

Guidance Information

1 Definition
Accepted industry practice refers to approved codes of practice and standardised procedures accepted by the wider wood manufacturing industry as examples of best practice.

2 Assessment information
All activities and evidence must meet accepted industry practice.

3 Recommended unit standard for entry: Unit 736, *Demonstrate knowledge of physical characteristics of wood*.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of physical properties of wood.

Performance criteria

1.1 The physical properties of wood are defined.

Range density, moisture content, microstructure, growth features.

1.2 Sapwood and heartwood in radiata pine are compared in terms of strength, formation, characteristics, and pits.

1.3 Major cell types found in hardwood and softwoods are compared in terms of their function, size, and the type of tree in which they occur.

Range vessels, tracheids, rays.

1.4 Effects of extractives on the physical properties of wood are explained.

Range properties – colour, permeability, durability.

1.5 Chemical components of cellulose and hemi-cellulose are described in terms of their effect on the shrinkage and swelling of wood.

1.6 The difference between corewood and outerwood is explained in terms of its impact on wood quality.

1.7 Compression wood and tension wood are described in terms of the location in the tree, causes, appearance, and processing effect.

Outcome 2

Demonstrate knowledge of permeability in wood.

Performance criteria

2.1 Permeability is defined in relation to wood.

2.2 Effects of permeability on wood drying and treatment processes are explained.

2.3 Factors affecting permeability in wood are explained.

Range factors include – species, heartwood and sapwood, early wood and latewood, density, compression wood, extractives, cutting patterns.

Outcome 3

Demonstrate knowledge of density and moisture content in wood.

Performance criteria

3.1 The relationship between density and moisture content in wood is explained and the formulae stated.

3.2 Effects of moisture content and density on wood are described in terms of preservation, drying, stiffness, and strength.

3.3 Effects of age, geographical location, and climatic conditions on density are explained for radiata pine in New Zealand.

3.4 Trends in fibre length and density of radiata pine from pith to bark are described.

Planned review date	31 December 2024

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	5 July 1993	31 December 2012
Review	2	24 October 1996	31 December 2012
Review	3	10 February 1999	31 December 2012
Revision	4	14 March 2000	31 December 2012
Review	5	18 December 2006	31 December 2012
Review	6	15 April 2011	N/A
Review	7	28 May 2020	N/A

Consent and Moderation Requirements (CMR) reference	0013

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.