

<b>Title</b>	<b>Verify structural timber, analyse test data, and complete despatch procedures</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>20</b>

<b>Purpose</b>	People credited with this unit standard are able to: explain the verification process for structural timber; identify and describe test failures and corrective action to be taken in case of test failures; verify structural timber; and analyse the verification test data, and complete audit, branding and despatch procedures.
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<b>Classification</b>	Solid Wood Manufacturing > Timber Grading
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<b>Available grade</b>	Achieved
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## Guidance Information

- Legislation and references  
 Health and Safety at Work Act 2015.  
 Resource Management Act 1991.  
 The following references available at Standards New Zealand  
<https://shop.standards.govt.nz/search/ed>:  
 AS/NZS 1748.1:2011 *Timber - Solid - Stress-graded for structural purposes - General requirements*;  
 AS/NZS 1748.2:2011 *Timber - Solid - Stress-graded for structural purposes - Qualification of grading method*;  
 AS/NZS 4063.1: 2010 *Characterization of structural timber - Test methods*;  
 AS/NZS 4063.2: 2010 *Characterization of structural timber - Determination of characteristic values*;  
 AS/NZS 4490:2011 *Timber - Stress-graded for structural purposes - Verification of properties*;  
 NZS 3622:2004 *Verification of timber properties*.
- Definitions  
*Accepted industry practice* – approved codes of practice and standardised procedures accepted by the wider solid wood manufacturing industry as examples of best practice.  
*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 industry sector.

- 3 Assessment information  
All activities and evidence must meet workplace procedures, accepted industry practice, and NZS 3622.
- 4 Recommended unit standard for entry:  
Unit 24605, *Explain and verify requirements for structural timber*.

## Outcomes and performance criteria

### Outcome 1

Explain the verification process for structural timber.

#### Performance criteria

- 1.1 The process for verifying structural timber is explained.
 

Range	the explanation must include – initial evaluation of wood properties; identification of both Pinus Radiata and Douglas Fir; approval of all grades and sizes produced; pre-approval audit process; in-mill monitoring with feedback to production staff; changes to grade/size of logs cut, cutting patterns, visual grading (over-ride) rules, target moisture content range; external audits by third party organisation; differences in structural properties of wet and dry timber and the processes involved in testing of each.
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- 1.2 The purpose and process of the initial evaluation is explained.
- 1.3 The target bending strengths and average stiffness requirements are identified for four different grades.
 

Range	evidence is required of one mechanically stress grade (MSG) and one visually stress graded (VSG)/G8 grade.
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- 1.4 The method of calculating proof or static tester settings are described, and calculations are given for four timber sizes.
- 1.5 The target test loads for lower bound stiffness, average stiffness, and bending strength for four different sizes in one grade are identified.
- 1.6 The factors influencing stiffness and strength are described.
 

Range	factors include density, moisture content, knot size, sloping grain, other defects.
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### Outcome 2

Identify and describe test failures and corrective action to be taken in case of test failures.

**Performance criteria**

- 2.1 The three types of test failures are described.
- Range bending strength failure, average stiffness failure, 5th percentile failure.
- 2.2 The action to be taken in the case of a test failure is identified.
- 2.3 The action to be taken in the case of a subsequent test failure is described.
- 2.4 The options for downgrading branded product are identified.
- 2.5 The site process and documentation required for dealing with test failures are identified and described.

**Outcome 3**

Verify structural timber.

**Performance criteria**

- 3.1 Hazards associated with operating verification test equipment are identified and actions to be taken to manage the hazards are described.
- Range hazards may include but are not limited to – moving equipment, mobile plant, noise, loose clothing.
- 3.2 Safe work practices associated with operating verification test equipment are applied.
- Range safety practices may include but are not limited to – isolation procedures, lock outs, emergency stops, machine guarding, wearing of appropriate safety equipment.
- 3.3 Verification equipment is set up, checked, calibrated, and operated.
- Range verification equipment may include but is not limited to – moisture meter, vernier callipers, test press, load cell.
- 3.4 Visual over-ride grading rules used for gauged product are identified for MSG or VSG product.
- 3.5 Samples for verification are selected, moisture contents are measured, and the samples are tested.
- 3.6 Test data is recorded and checked for compliance with NZS 3622.

**Outcome 4**

Analyse the verification test data, and complete audit, branding and despatch procedures.

**Performance criteria**

- 4.1 Verification test data and graphs are analysed and compared to verification requirements of NZS 3622, and corrective actions are taken.
- 4.2 Audit requirements are identified and completed.
- 4.3 Branding and despatch documentation are completed for the verified structural timber product, and site documentation for re-grading or rejecting of product is completed.

<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	25 January 2008	N/A
Review	2	23 April 2020	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	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](mailto:qualifications@competenz.org.nz) if you wish to suggest changes to the content of this unit standard.