

Title	Demonstrate knowledge of mechanical stress grading of timber		
Level	2	Credits	5

Purpose	People credited with this unit standard are able to demonstrate knowledge of: mechanical stress grading and its application in the timber industry; and operating principles of mechanical stress grading equipment.
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Classification	Solid Wood Manufacturing > Timber Grading
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Available grade	Achieved
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Guidance Information

- 1 References, available at Standards New Zealand
<https://shop.standards.govt.nz/search/ed>:
 AS/NZS 1748:2011 *Timber - Solid - stress-graded for structural purposes*;
 AS/NZS 4490:1997 *Timber - Stress-graded - Procedures for monitoring structural properties*;
 AS/NZS 4063.1:2010 *Characterization of structural timber - Test methods*;
 AS/NZS 4063.2:2010 *Characterization of structural timber - Determination of characteristic values*;
 NZS 3622: 2004 *Verification of timber properties*.
- 2 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 and accepted industry practice.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of machine stress grading and its application in the timber industry.

Performance criteria

- 1.1 Role and purpose of stress grading in the timber industry are described.
- 1.2 Advantages of machine stress grading (MSG) are compared with visual grading of timber.
- 1.3 All MSG grades that are detailed by NZS 3622 are identified.

Outcome 2

Demonstrate knowledge of operating principles of machine stress grading equipment.

Performance criteria

- 2.1 Factors affecting timber stiffness are described.
Range evidence of three factors required.
- 2.2 Methods used to machine stress grade timber products are described.
Range may include but is not limited to – constant load, constant deflection, sonic wave, X ray.
- 2.3 The terms modulus of elasticity and modulus of rupture, as they relate to structural timber, are explained.

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	31 December 2012
Rollover and Revision	2	15 April 2011	N/A
Review	3	23 April 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.