Title	**Conduct stress testing of wooden poles and piles**		
Level	**4**	**Credits**	**10**

Purpose	People credited with this unit standard are able to: demonstrate knowledge of the purpose, basic components, and the operation of a mechanical stress-testing machine; operate a mechanical stress-testing machine; monitor a mechanical stress-testing machine and analyse product results; and complete testing activities.

Classification	Solid Wood Manufacturing > Pole and Post Manufacturing

Available grade	Achieved

Guidance Information

1 Legislation and reference
Health and Safety at Work Act 2015.
Resource Management Act 1991.
NZS 3605:2001 *Timber piles and poles for use in building*, available at http://www.standards.co.nz/.

2 Definitions
Accepted industry practice – approved codes of practice and standardised procedures accepted by the wider 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, codes of practice, 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 the purpose, basic components, and the operation of a mechanical stress-testing machine.

Performance criteria

1.1 The purpose of pole stress-testing is described in accordance with NZS 3605: 2001.

1.2 The basic components of a stress testing machine are described in terms of their operational relationships to each other and the product being tested.

Range components may include but are not limited to – pins, bed, hydraulic ram, ground line, load cell, digital display unit, anchor and load points;
evidence of three components is required.

Outcome 2

Operate a mechanical stress-testing machine.

Performance criteria

2.1 Machine is calibrated and operated in accordance with the manufacturer's specifications.

2.2 Safety practices are identified and used during the operation of a mechanical stress-testing machine.

2.3 Visual grading of wooden poles and piles are carried out in conjunction with mechanical stress testing.

Range grading includes but is not limited to – physical presentation of pole, dimensions, maximum knot sizes, knot combinations, defects or damage, sweep, grain, state (green sawn, steamed, treated).

2.4 Tests and measurements of wooden poles and piles are carried out in accordance with NZS 3605:2001 requirements.

Range tests may include but are not limited to – stress testing at ground line to prove Ultimate Top Load (UTL) for Utility Poles, centre testing for High Density confirmation, Custom Three and Four Point Testing, bending strength testing for anchor piles.

2.5 Corrective actions are taken when test results are not within the expected range.

Range corrective actions may include but are not limited to – re-test, re-sample, down grading or remanufacture, disposal, reporting.

Outcome 3

Monitor a mechanical stress-testing machine and analyse product results.

Performance criteria

3.1 Any operating faults are recognised, and corrective action is taken.

Range operating faults may include but are not limited to – incorrect machine settings, size parameters, pressure settings, mechanical faults.

3.2 Output data or product results are monitored and analysed in accordance with NZS 3605:2001.

Outcome 4

Complete testing activities.

Performance criteria

4.1 Individual poles are labelled in accordance with customer requirements.

4.2 Tools, equipment, and materials are accounted for and returned to storage.

4.3 Machine and work area are left clean and tidy, and ready for next use.

4.4 Documentation is completed, communicated, and filed.

Range analysis, production, maintenance, quality records.

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	28 April 2003	31 December 2012
Review	2	18 December 2006	31 December 2012
Review	3	20 October 2011	31 December 2015
Review	4	20 March 2014	31 December 2015
Rollover	5	16 April 2015	31 December 2018
Reinstatement	6	26 March 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.