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| **Title** | **Confirm log grades and scale logs** | | |
| **Level** | **3** | **Credits** | **10** |

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| **Purpose** | People credited with this unit standard are able to: manage hazards associated with confirming log grades and scaling logs; demonstrate knowledge of the reasons for log grading; identify and confirm log grades; describe log scaling procedures; demonstrate knowledge of the features of log scaling; scale logs and use conversion factors to calculate log volumes. |

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| **Classification** | Wood Handling and Distribution > Wood Preparation |

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| **Available grade** | Achieved |

**Guidance Information**

1 Legislation and reference
Health and Safety at Work Act 2015.
Resource Management Act 1991.
*Approved Code of Practice for Safety and Health in Forest Operations* (Wellington: WorkSafe, 2012), available at https://worksafe.govt.nz/topic-and-industry/forestry/safety-and-health-in-forest-operations/.

2 Definitions
*Accepted industry practice* refers to approved codes of practice and standardised procedures accepted by the wider handling and distribution industry as examples of best practice.
*Log scaling* refers to the measurement of log dimensions and calculation of log volumes.
*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 handling and distribution sector.

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

4 Recommended unit standards for entry: Unit 736, *Demonstrate knowledge of physical characteristics of woo*d; and Unit 8008, *Demonstrate knowledge of log yard operations*.

## Outcomes and performance criteria

### Outcome 1

Manage hazards associated with confirming log grades and scaling logs.

**Performance criteria**

1.1 Hazards associated with confirming log grades are identified and actions to be taken to manage the hazard are described.

Range may include but are not limited to – mobile plant, dust, noise, moving logs.

1.2 Safe work practices associated with confirming log grades are identified and applied.

Range practices may include but are not limited to – isolation procedures, lock-outs, working around mobile plant, wearing appropriate safety equipment.

### Outcome 2

Demonstrate knowledge of the reasons for log grading.

**Performance criteria**

2.1 Reasons for purchasing to a uniform log size and quality are explained.

Range production throughput, recovery, saleable product mix, profitability.

2.2 Relative values of current log grades are identified.

Range economic, grade and conversion recovery.

### Outcome 3

Identify and confirm log grades.

**Performance criteria**

3.1 Log grade specifications are interpreted in terms of log characteristics.

Range log characteristics may include but are not limited to – length, pruned or unpruned, small end diameter, largest single branch, sweep class and minimum internode length index, mechanical or insect damage, draw wood, sapstain, decay, butt flare, nodal swelling, wobble.

3.2 Grade marks are identified from suppliers' marks, brands and delivery dockets.

3.3 Log characteristics are measured, calculated, and compared with log grade specifications.

3.4 Supplied log grades and lengths are confirmed according to customer specifications.

**Outcome 4**

Describe log scaling procedures.

**Performance criteria**

4.1 Procedures for rule, tape, and calliper placement are described.

4.2 Methods for determining log volume are described.

Range evidence of two methods is required.

4.3 Interpretation of loader and weighbridge weigh scales are described.

**Outcome 5**

Demonstrate knowledge of the features of log scaling.

**Performance criteria**

5.1 Calibration of log scaling equipment is described.

Range tapes, rules, callipers.

5.2 Checks for accuracy of log scaling data using scaling equipment and recording methods are described.

5.3 Description explains how sample loads for weight scale factors are planned and identified. Planning factors and identification of sample loads for weight scale factors are described.

5.4 The requirement for weight-to-volume conversion factors is explained.

5.5 Derivation of weight-to-volume conversion factors is explained.

**Outcome 6**

Scale logs and use conversion factors to calculate log volumes.

**Performance criteria**

6.1 Log dimensions are measured, and the volume is calculated from the dimensions.

Range volumes of five logs are calculated from data obtained using computer and/or calculator.

6.2 Volume is calculated from weight using a weights scale factor.

Range three weights of log loads.

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| **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 2020 |
| Review | 2 | 24 October 1996 | 31 December 2020 |
| Review | 3 | 10 February 1999 | 31 December 2020 |
| Review | 4 | 18 December 2006 | N/A |
| Review | 5 | 28 May 2020 | N/A |

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| **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.