
WOOD TECHNOLOGY
Develop optimisation procedures for a
wood manufacturing operation

level:	5
credit:	20
planned review date:	September 2007
sub-field:	Wood Processing Technology
purpose:	People credited with this unit standard are able to: identify opportunities for optimising wood-based production; gather information relevant to optimising wood-based production; develop optimisation procedures; and recommend changes to production procedures.
entry information:	Open.
accreditation option:	Evaluation of documentation and visit by NZQA and industry.
moderation option:	A centrally established and directed national moderation system has been set up by Forest Industries Training.
special notes:	<ol style="list-style-type: none">1 Definitions For the purpose of this unit standard, the term <i>wood-based industries</i> means solid wood processing, wood product manufacturing, or plywood and laminated veneer lumber manufacture. For the purpose of this unit standard, <i>optimisation</i> means realising the potential effectiveness and efficiency of manufacturing processes in order to provide added benefits to the organisation and its customers. Examples include: processing efficiency; management of process utility consumption; management of pollution in process waste streams; reduction of costs, waste, and variation; implementation of new equipment, technology, and systems; management of the storage, handling, and transportation of materials.2 Assessment for this unit standard will be based on the application of optimising wood-based production in this unit standard to a particular wood manufacturing operation case.

WOOD TECHNOLOGY
Develop optimisation procedures for a
wood manufacturing operation

Elements and Performance Criteria

element 1

Identify opportunities for optimising wood-based production.

performance criteria

- 1.1 Sources of optimisation opportunities are identified from internal and/or external factors.
- Range: examples of internal factors are - staff suggestions for improvement, internal customer requirements, future development of the organisation and innovation from within the organisation, evaluation of the outcomes of previous improvements, internal audits; examples of external factors are - expectations of actual and potential customers; customer feedback; competitor activity; legislative and regulatory requirements; market and economic trends affecting supply; cultural, ethical and diversity expectations; external audits; contractual requirements.
- 1.2 Identification and diagnosis of optimisation opportunities comply with organisational policies and procedures.
- Range: policies and procedures - company and/or professionally defined best practices and/or employment contract.
- 1.3 Measurable criteria for identifying, evaluating, and prioritising optimisation opportunities are selected in accordance with worksite objectives, resources, and needs.

WOOD TECHNOLOGY
Develop optimisation procedures for a
wood manufacturing operation

element 2

Gather information relevant to optimising wood-based production.

performance criteria

- 2.1 Sources of information are identified in accordance with worksite requirements.
- Range: sources of information include but are not limited to - direct testing and measurement, production data, anecdotal evidence.
- 2.2 Information gathering and analysis techniques are selected and applied according to worksite requirements.
- Range: examples of techniques are - probability, distribution analysis of variances, simulation, risk and sensitivity analysis, cause and effect analysis, multi-step improvement processes, benchmarking, statistical process control, monitoring quality costs (prevention and failure).
Evidence is required for two.
- 2.3 Test and measuring equipment are selected and applied within equipment specification.
- Range: examples of test and measuring equipment are - meters, frequency counters.
Evidence is required for two.
- 2.4 Tests are repeated sufficiently to provide data on which valid conclusions can be drawn and to determine the reproducibility of the method.
- 2.5 Data are recorded using specified units in the specified place and order in accordance with worksite requirements.
- 2.6 Deviations from expected data and results are recorded in accordance with worksite requirements.

WOOD TECHNOLOGY
Develop optimisation procedures for a
wood manufacturing operation

element 3

Develop optimisation procedures.

performance criteria

3.1 The developed optimisation procedures are within plant capability, improves the manufacturing system's operational performance, and maintains system integrity.

3.2 The developed optimisation procedures make efficient use of resources, take account of worksite requirements for safety, and cater for anticipated future needs.

Range: future needs - plant growth, new technology, new projects.

3.3 The developed optimisation procedures demonstrate consistent design criteria, with distinct and clearly documented objectives, milestones, monitoring, feedback, targets, and success criteria.

3.4 The developed optimisation procedures take account of the scientific and engineering principles of the materials and manufacturing processes involved.

Range: scientific principles include - the physical and/or chemical properties of wood as a raw material.

3.5 The optimisation procedures are developed using input from stakeholders and specialists.

Range: examples of stakeholders are - operators, supervisors, managers, customers;
examples of specialists are - operators, production engineers, design engineers, plant and systems analysts, trades people, members of quality networks.

WOOD TECHNOLOGY
Develop optimisation procedures for a
wood manufacturing operation

element 4

Recommend changes to production procedures.

performance criteria

4.1 Recommendations regarding changes to production procedures are based on an objective analysis of data, and demonstrate the benefits to the organisation.

4.2 Recommended changes optimise the use of available material, capital, and staff.

Range: the use of capital includes but is not limited to consideration of - return on investment, return on assets, payback period.

Comments on this unit standard

Please contact Competenz at info@competenz.org.nz if you wish to suggest changes to the content of this unit standard.

Please Note

Providers must be accredited by the Qualifications Authority or a delegated inter-institutional body before they can register credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be accredited by the Qualifications Authority before they can register credits from assessment against unit standards.

Accredited providers and Industry Training Organisations assessing against unit standards must engage with the moderation system that applies to those standards.

Accreditation requirements and an outline of the moderation system that applies to this standard are outlined in the Accreditation and Moderation Action Plan (AMAP). The AMAP also includes useful information about special requirements for providers wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

This unit standard is covered by AMAP 0173 which can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.