
WOOD MANUFACTURING
**Design a statistical process control
system to monitor and improve quality
in wood manufacturing**

level:	6
credit:	10
planned review date:	September 2005
sub-field:	Wood Processing Technology
purpose:	People credited with this unit standard are able to: design a system to measure process capability for a selected wood manufacturing operation; design a sampling system to determine attribute variance within a selected wood manufacturing process stage; analyse results from a sampling system, apply control limits and determine whether process capability meets customer requirements for a specified wood manufacturing process stage; and review the sampling system and recommend improvements to ensure customer requirements are met consistently.
entry information:	Recommended: Unit 20265, <i>Develop and evaluate quality management techniques applied in wood manufacturing</i> , or demonstrate equivalent knowledge and skills.
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:	<p>1 Definitions</p> <p><i>Wood manufacturing operation</i> means a solid wood processing, wood product manufacturing, or plywood and laminated veneer lumber operation.</p> <p><i>Manufacturing process stage</i> refers to a process stage and may include but is not limited to debarking, sawing, re-sawing, moulding, shaping, defecting, finger jointing, laminating, machining, peeling, lay up, drying, sanding, and packaging.</p>

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- 2 Assessment for this unit standard will be based on analysis and comparison of a specified industry workplace with business concepts covered in this unit standard.

Elements and Performance Criteria

element 1

Design a system to measure process capability for a selected wood manufacturing operation.

performance criteria

- 1.1 System includes process flow diagram for the selected wood manufacturing process.

Range: process flow diagram to include - detailed decision making activities, adoptions of standards and specifications, reporting mechanisms, diagrammatic description of the process.

- 1.2 System identifies sources of variability and defines the quality outcomes required to ensure wood product conformance.

Range: variability includes - raw materials, process, customer expectations.

element 2

Design a sampling system to determine attribute variance within a selected wood manufacturing process stage.

performance criteria

- 2.1 Sampling system defines appropriate attributes for measurement for the specified wood manufacturing process stage.

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- 2.2 Sampling system defines the sample size and frequency to ensure statistical integrity of the system.
- 2.3 Sampling system defines data gathering methodologies to be applied in the wood manufacturing operation to ensure statistical integrity.
- 2.4 Sampling system defines reporting and interpreting mechanisms in the wood manufacturing operation that will ensure statistical integrity.

element 3

Analyse results from a sampling system, apply control limits and determine whether process capability meets customer requirements for a specified wood manufacturing process stage.

performance criteria

- 3.1 Analysis compares attribute variation with process control limits that are set by wood product customer requirements.
- 3.2 Analysis determines and graphically displays the attribute variation and control limits calculated from measured data for the specified wood manufacturing process stage.

element 4

Review the sampling system and recommend improvements to ensure wood product customer requirements are met consistently.

performance criteria

- 4.1 Review compares customer requirements with wood manufacturing process capability and identifies areas for improvement.
- 4.2 Review ranks root causes of wood manufacturing variability based on severity of non conformance to customers specifications.
- 4.3 Review recommends improvements to materials and wood manufacturing processes to ensure customer requirements are exceeded.

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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>.