

Title	Demonstrate knowledge of manufacturing processes involved in wood pulping and paper making		
Level	3	Credits	10

Purpose	People credited with this unit standard are able to demonstrate knowledge of: processes involved in wood pulping and fourdrinier paper making; and steam supply issues for wood pulping and paper making.
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Classification	Wood Fibre Manufacturing > Pulp and Paper Technology
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Available grade	Achieved
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Explanatory notes

All evidence requirements must be demonstrated and assessed in accordance with the reference text: *Demonstrate knowledge of manufacturing processes involved in pulp and paper manufacturing* published by Competenz and available from Competenz at <http://www.competenz.org.nz>, or Competenz, PO Box 9005, Newmarket, Auckland 1149.

Outcomes and evidence requirements

Outcome 1

Demonstrate knowledge of processes involved in wood pulping.

Evidence requirements

- 1.1 Processes involved in manufacturing wood chips for wood pulp production are described.
- Range debarking, chipping, screening, storage.
- 1.2 Processes used to separate wood fibres in chemical pulping are described.
- 1.3 Properties of chemical pulps are described in terms of bleachability and paper strength.
- 1.4 Reasons for cleaning, washing, and screening pulp are explained and methods described.
- Range reasons – defibring and knot removal, residual chemical removal; methods – pressure and diffusion washing, vibratory screening, pressure screening, centrifugal screening.

1.5 Functions and processes of chemical pulp bleaching are outlined.

Range functions – delignification, extraction, brightening.

Outcome 2

Demonstrate knowledge of processes involved in fourdrinier paper making.

Evidence requirements

2.1 Production stages are explained in terms of the processes used and their purpose.

Range stock preparation, web formation, web pressing, web drying, surface treatment, reeling, winding, sheeting.

2.2 Components of the paper machine wet end are identified and their purpose is explained.

Range fan pump, headbox, forming section, press section.

2.3 Components of a single wire fourdrinier section are identified.

Range wire table, drainage elements, couch, breast rolls, guide rolls.

2.4 Components of a drying section are identified and the method of web drying is described.

2.5 Function of calendering is described in terms of sheet thickness and smoothness.

2.6 Reeler function is described in terms of continuous machine operation and removal of finished product.

2.7 Basic process differences between fourdrinier production and other paper making processes are described.

Range may include – tissue, newsprint, multiply carton board, linerboard; evidence is required for one.

Outcome 3

Demonstrate knowledge of steam supply issues for wood pulping and paper making.

Evidence requirements

3.1 The uses of steam in wood pulping and paper making are described.

3.2 The impacts of fluctuating steam demand on boiler operations are described.

Planned review date	31 December 2019
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	30 November 2000	N/A
Review	2	18 December 2006	N/A
Review	3	24 October 2014	N/A

Consent and Moderation Requirements (CMR) reference	0173
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

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.