

Title	Describe the manufacturing processes involved in wood pulping and paper making		
Level	3	Credits	10

Purpose	People credited with this unit standard are able to describe: the processes involved in wood pulping and fourdrinier paper making; and issues of steam supply 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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Guidance Information

1 Definition

Worksite documentation refers to organisation policies and procedures that are documented in memo, electronic, or manual format and available in the workplace, and are consistent with manufacturer's requirements. 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, sustainability, on-site briefings, supervisor's instructions, and procedures to comply with legislative and local body requirements relevant to the pulp and paper industry.

2 Assessment Information

Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable service information, worksite documentation and legislative requirements. This includes the knowledge and use of suitable tools and equipment.

Outcomes and performance criteria

Outcome 1

Describe processes involved in wood pulping.

Performance criteria

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 and methods for cleaning, washing, and screening pulp are 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 described.
- Range functions – delignification, extraction, brightening.

Outcome 2

Describe the processes involved in fourdrinier paper making.

Performance criteria

- 2.1 Production stages are described 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 and their purpose are described.
- Range fan pump, headbox, forming section, press section.
- 2.3 Components of a single wire fourdrinier section are described.
- Range wire table, drainage elements, couch, breast rolls, guide rolls.
- 2.4 Components of a drying section and the method of web drying are 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.

Outcome 3

Describe issues of steam supply for wood pulping and paper making.

Performance criteria

- 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 2028
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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	31 December 2024
Review	2	18 December 2006	31 December 2024
Review	3	24 October 2014	31 December 2025
Review	4	30 November 2023	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>.

Comments on this unit standard

Please contact Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.