

<b>Title</b>	<b>Bleach mechanical wood pulp in wood pulp manufacturing</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>10</b>

<b>Purpose</b>	People credited with this unit standard are able to: demonstrate knowledge of bleaching mechanical wood pulp; operate bleaching equipment; and monitor and control the performance of bleaching process.
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<b>Classification</b>	Wood Fibre Manufacturing > Pulp Making
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<b>Available grade</b>	Achieved
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### Guidance Information

#### 1 Legislation and references

Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the:

- Hazardous Substances and New Organisms Act 1996;
- Health and Safety at Work Act 2015;
- Resource Management Act 1991;
- Health and Safety at Work (Major Hazard Facilities) Regulations 2016.

#### 2 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 making industry.

#### 3 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.

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## Outcomes and performance criteria

### Outcome 1

Demonstrate knowledge of bleaching mechanical wood pulp.

**Performance criteria**

- 1.1 Purpose and function of bleaching mechanical wood pulp are explained.
- 1.2 Factors affecting bleach performance are explained.
- Range consistency, temperature, dwell or retention time, mixing, air entrainment, chemical concentration, chemical storage.
- 1.3 The operating parameters for the bleaching process are explained.
- Range chemical addition, time and temperature of bleaching process, ingoing consistency.
- 1.4 Operating components and process controls of bleaching system are described and their purpose and operation are explained.
- Range bleaching components may include but are not limited to – mix tanks, bleach tower, mixer, de-watering system, chemical addition, stock pumps.
- 1.5 Hazards associated with bleaching systems are identified and actions to be taken to minimise, or eliminate the hazards are explained.
- Range hazards may include but are not limited to – steam, heat, bleaching chemicals, moving plant components.
- 1.6 The consequences of non-compliance with worksite operating procedures are explained.
- 1.7 Roles and responsibilities of the bleach system operator are explained.

**Outcome 2**

Operate bleaching equipment.

**Performance criteria**

- 2.1 Safe work practices associated with operating bleaching equipment are demonstrated.
- Range practices may include but are not limited to – isolation procedures, lock-outs or tag-outs, emergency stops, machine guarding, the wearing of appropriate safety equipment.
- 2.2 Bleach equipment is set up, started up, operated, and shut down.
- 2.3 Essential care and housekeeping requirements for bleaching equipment are carried out.

**Outcome 3**

Monitor and control the performance of bleaching process.

**Performance criteria**

3.1 Performance of bleaching process is monitored and parameters are controlled in accordance with operating parameters.

Range control parameters – chemical addition, time and temperature of bleaching process, ingoing consistency.

3.2 Operating and equipment faults and malfunctions are identified, and relevant corrective actions are taken.

Range electrical, mechanical, hydraulic, instrumentation, blockages.

3.3 Brightness and consistency of output pulp are monitored to meet specified requirements.

3.4 Production rate is regulated and adjusted to meet downstream operation requirements.

3.5 Production, maintenance, and quality records are completed.

<b>Replacement information</b>	This unit standard replaced unit standard 3545 and unit standard 3546.
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<b>Planned review date</b>	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	18 December 2006	31 December 2024
Review	2	24 October 2014	31 December 2025
Review	3	30 November 2023	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	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](mailto:qualifications@hangaarorau.nz) if you wish to suggest changes to the content of this unit standard.