

Title	Operate and acid wash white liquor pressure filter equipment for wood pulp manufacturing		
Level	3	Credits	8

Purpose	People credited with this unit standard are able to: demonstrate knowledge of white liquor pressure filter equipment; operate white liquor pressure filter equipment; monitor and control the performance of white liquor pressure filter equipment; and acid wash white liquor pressure filter equipment.
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Classification	Wood Fibre Manufacturing > Pulp and Paper - Chemical Plants
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Available grade	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 Definitions

Operating parameters refer to the boundary conditions in which the operations are carried out with white liquor pressure filter equipment.

Operating procedures refer to the process(es) that are worked through, e.g. standard operating procedure (SOP) with white liquor pressure filter equipment.

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.

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.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of white liquor pressure filter equipment.

Performance criteria

- 1.1 Fundamentals and operation of the pressure filter equipment are explained in terms of pressure, mud level, mud density, and causticised liquor quality.
- 1.2 Operating parameters and capability of the white liquor pressure filter are explained.
- 1.3 Operating components and process controls of the pressure filter equipment are described and their purpose and operation are explained.
- Range components may include but are not limited to – filtering socks, feed pump, valves, scraper, liquor flows, pipework, mud pump, agitators, mud tank.
- 1.4 Hazards associated with the pressure filter equipment are identified and actions to be taken to minimise, or eliminate the hazard are described.
- Range hazards may include but are not limited to – white liquor, pressure, materials handling.
- 1.5 Consequences of non-compliance with worksite operating procedures are explained.
- 1.6 Roles and responsibilities of the white liquor pressure filter operator are explained.

Outcome 2

Operate white liquor pressure filter equipment.

Performance criteria

- 2.1 Safe work practices associated with operating white liquor pressure filter equipment are identified and used.
- Range practices may include but are not limited to – isolation procedures, lock-outs or tag-outs, emergency stops, machine guarding, wearing appropriate safety equipment.
- 2.2 Plant is set up, started up, operated, and shut down.
- Range plant may include but is not limited to – filtering socks, feed pump, valves, scraper, mud pump, agitators.

2.3 Operating parameters are set and adjusted to enable production requirements to be achieved.

Range operating parameters may include but are not limited to – mud level, causticised liquor flow;
production requirements may include but are not limited to – liquor clarity, production rate.

2.4 Essential care and housekeeping requirements are carried out.

Outcome 3

Monitor and control the performance of white liquor pressure filter equipment.

Performance criteria

3.1 White liquor pressure equipment is monitored, and parameters are controlled in accordance with operating parameters.

Range control parameters may include but are not limited to – mud level, causticised liquor flow.

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

Range equipment faults and malfunctions may include but are not limited to – mechanical, electrical, instrumentation, distributed control.

3.3 Mud density and output white liquor strength is monitored to meet specified requirements.

3.4 Production rate is regulated in accordance with process requirements.

3.5 Product and process testing is carried out.

Range testing includes – on-line testing, off-line testing.

3.6 Production, maintenance, and quality records are completed.

Outcome 4

Acid wash white liquor pressure filter equipment.

Performance criteria

4.1 Hazards associated with the acid wash are identified and actions to be taken to minimise, or eliminate the hazard are described.

Range hazards may include but are not limited to – potential chemical spillage to drains and injury, disposal of acid.

4.2 Acid wash procedure for the filter equipment is explained.

- 4.3 Filter equipment is taken off-line and prepared for acid wash.
- 4.4 Acid for the wash is prepared.
- 4.5 Acid flows to the filter equipment are established.
- 4.6 Wash cycles are completed and acid strength is monitored.
- 4.7 Make up acid is added to the system as required, in response to acid strength tests.
- 4.8 Flushing of the filter equipment is completed.
- 4.9 Documentation for the acid wash procedure is completed.

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	22 February 1995	31 December 2024
Revision	2	27 January 1997	31 December 2024
Review	3	25 February 1999	31 December 2024
Review	4	18 December 2006	31 December 2024
Review	5	24 October 2014	31 December 2025
Review	6	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.