

Title	Dry pulp webs using air drying process		
Level	4	Credits	10

Purpose	People credited with this unit standard are able to: demonstrate knowledge of the air drying process; operate and control airborne dryer section and sheet tensioning equipment; and monitor and control the performance of the airborne dryer and sheet tensioning equipment.
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Classification	Wood Fibre Manufacturing > Pulp and Paper Manufacturing Skills
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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

RCA refers to root cause analysis.

TCC refers to trouble cause correct.

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 the air drying process.

Performance criteria

- 1.1 Function of air drying in the pulp drying process is explained.
- 1.2 Function, control, and purpose of drive systems are explained.
- Range draws, load sharing, sheet tension, speed.
- 1.3 Operating principles of an airborne drying system are explained.
- Range principles may include but are not limited to – cushion of air, Bernoulli's principle, air-to-air heat exchange.
- 1.4 Components of an air dryer section are described and their purpose and operation are explained.
- Range components may include but are not limited to – steam system, exhaust, heat induction system, condensate system, flow boxes, associated hood system, rope system, rolls, doctor blades, distributed control system.
- 1.5 Types of rolls are identified, and their purpose and operation in the sheet tensioning are explained.
- Range types of rolls may include but are not limited to – guide rolls, spreader rolls, sheet tensioning rolls, blow rolls.
- 1.6 Operating parameters and capability of the airborne dryer and sheet tension controls are explained.
- Range temperature, throughput, sheet tension.
- 1.7 Hazards associated with airborne dryers and associated sheet tension controls are identified and actions to be taken to minimise, or eliminate the hazards are described.
- Range hazards may include but are not limited to – moving components, nips, ropes, heat, steam, steam and condensate lines, pressure, compressed air.
- 1.8 Firefighting procedures for the airborne dryer are described.
- Range steam quench, response sequences.

1.9 Consequences of non-conformance of airborne drying with worksite operating procedures are described.

1.10 Roles and responsibilities of the airborne dryer operator are described.

Outcome 2

Operate and control airborne dryer section and sheet tensioning equipment.

Performance criteria

2.1 Safe work practices associated with operating and controlling airborne dryer section and sheet tensioning equipment are demonstrated.

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 Airborne dryer section and sheet tensioning equipment are set up, started up, operated, and shut down.

Range steam adjustment, sheet threading, draw control, guiding adjustments.

2.3 Guiding systems, doctor blades, and blow rolls are set up and operated.

2.4 Controls for draw and load sharing are operated.

2.5 Essential care and housekeeping for the airborne dryer and sheet tensioning equipment are carried out.

Outcome 3

Monitor and control the performance of the airborne dryer and sheet tensioning equipment.

Performance criteria

3.1 Air drying and sheet tensioning are monitored and parameters are controlled in accordance with operating parameters.

Range performance – draw control, drying efficiency;
performance parameters – moisture content, moisture profile, sheet towing, required sheet finish.

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

Range operating faults may include but are not limited to – sheet breaks, cracked edges, visual defects, folding, delamination, creasing, dryer clothing faults, process steam variations, hood control; equipment faults and malfunctions – electrical, mechanical, instrumentation, distributed controls.

- 3.3 Airborne dryer, sheet tensioning and production rate are monitored to meet process requirements.
- Range may include but is not limited to – sheet finish, moisture content.
- 3.4 Relevant problem-solving techniques to assist with troubleshooting are used.
- Range problem solving techniques may include but are not limited to – RCA, TCCs, 5 why.
- 3.5 Production, maintenance notification, and quality records are completed.

Replacement information	This unit standard replaced unit standard 3522 and, with unit standard 21490, replaced unit standard 3575.
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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	18 December 2006	31 December 2024
Review	2	24 October 2014	31 December 2025
Review	3	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.