

Title	Calender pulp and paper		
Level	4	Credits	10

Purpose	People credited with this unit standard are able to: explain fundamentals of calendering; operate and maintain a calender system efficiently; and monitor and control the efficient performance of a calender system.
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Classification	Wood Fibre Manufacturing > Paper Making
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Available grade	Achieved
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Explanatory notes

- 1 Definition
Worksite documentation refers to instructions to staff on policy and procedures (including the application of legislation to worksite situations) which are formally documented, and are available for reference at the worksite. Examples are standard operating procedures, specifications, manuals, and manufacturer's information.
- 2 The following apply to the performance of all outcomes of this unit standard:
 - a All work practices must meet recognised codes of practice and documented worksite health and safety and environmental procedures (where these exceed code) for personal, product, and worksite health and safety, and must meet the obligations required under current legislation, including the Health and Safety in Employment Act 1992, the Resource Management Act 1991, and their subsequent amendments.
 - b All work practices must meet documented worksite operating procedures. This includes the recording (by electronic or non-electronic means) of activities, events, and decisions.
 - c All communications made in relation to this unit standard must be made in accordance with worksite procedures for content, recipient, timing, and method.

Outcomes and evidence requirements

Outcome 1

Explain fundamentals of calendering.

Evidence requirements

- 1.1 Purpose and function of calendering in the pulp and paper making process is explained in accordance with worksite documentation.

- 1.2 Principles of calendering are explained in accordance with worksite documentation.
- Range explanation to include – roll surface characteristics, draw control, calliper profile, bulk, roll temperature profiling, roll loading, crown controlled rolls.
- 1.3 Components and operation of the calender system are explained in terms of calender threading, calliper control, roll temperature profiling, roll loading and doctors, and thickness control.
- 1.4 Operating parameters and capability of the calender system are explained in accordance with worksite documentation.
- 1.5 Hazards associated with calendering are identified and actions to be taken to isolate, minimise, or eliminate the hazard are described in accordance with worksite documentation.
- Range hazards may include but are not limited to – heat, nips, doctor blades, hot liquids, paper cuts, pressurised lines.
- 1.6 Consequences of non-conformance with worksite operating procedures are described in accordance with worksite documentation.
- 1.7 Roles and responsibilities of the calender system operator are described in accordance with worksite documentation.

Outcome 2

Operate and maintain a calender system efficiently.

Evidence requirements

- 2.1 Safe work practices associated with operating and maintaining a calender system are identified and used in accordance with worksite documentation and legislative requirements.
- Range practices may include but are not limited to – isolation procedures, lock-outs, emergency stops, machine guarding, wearing appropriate safety equipment.
- 2.2 Calender system is set up, started up, operated, and shut down efficiently in accordance with worksite documentation.
- Range includes but is not limited to – load setting, roll temperature, draw, adjustment of nip load, threading of paper web through the calender, adjustment of web tension.
- 2.3 Setting and timely adjustment of process parameters enables the calender system to achieve production requirements in accordance with worksite documentation.

- 2.4 Preventative maintenance and cleaning schedules for the calender system are carried out in accordance with worksite documentation.

Outcome 3

Monitor and control the efficient performance of a calender system.

Evidence requirements

- 3.1 Monitoring and interpretation of feedback information and the timely adjustment of control parameters enable product quality, efficient plant performance, and process and legislative requirements to be maintained in accordance with worksite documentation.

- 3.2 Operating and equipment faults and malfunctions are identified, and corrective action is taken, in accordance with worksite documentation.

Range operating faults and malfunctions – abnormal moisture and calender temperature variations, calender cuts, blackening, abnormal profile variations, abnormal load settings; equipment faults and malfunctions – electrical, mechanical, hydraulic, pneumatic, instrumentation, distributed control system.

- 3.3 Output paper meets the requirements of worksite documentation for surface finish.

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	22 February 1995	N/A
Revision	2	27 January 1997	N/A
Review	3	25 February 1999	N/A
Review	4	18 December 2006	N/A
Review	5	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.