

<b>Title</b>	<b>Laboratory test pulp, paper, and chemical products</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: explain fundamentals of pulp, paper and chemical product testing in a laboratory; gather samples, and select and apply tests in a laboratory; and record, analyse, and report test data.
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<b>Classification</b>	Wood Fibre Manufacturing > Pulp and Paper Manufacturing Skills
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<b>Available grade</b>	Achieved
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### Guidance Information

#### 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 Range

Pulp and paper tests may include but are not limited to – consistency, brightness, kappa number, liquor strength, chemical strength, soda content, dirt and shive content, fibre length, freeness, resin concentration by extraction in baled pulp, burst, tear, water resistance, pH, opacity, tensile, porosity, flame retardancy, fold testing, sterility, friction, wax, colour variation, rigidity, shade, absorbency, printability, grammage, thickness, roughness, ash content, oil content, stretch, air resistance, bulking thickness, ring crush, short span compressive strength, colour;

Chemical tests may include but are not limited to – chemical strengths (of chlorine water, chlorine dioxide solutions, hypochlorite, sodium chlorate, peroxide, caustic, silicate, kraft cooking liquors), residual levels of peroxide and silicate in white water, identification tests for incoming chemicals, presence of calcium, oxygen test, explosive level test, oxidation-reduction potential, acidity, alkalinity, sedimentation rate, availability of chlorine (in hydrochloric acid, sodium hypochlorite, and brine), availability of sulphur compounds in kraft cooking and spent cooking liquors, availability of hydroxide ions in kraft and spent cooking liquors.

- 3 The following apply to the performance of all outcomes of this unit standard:
- 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, the Hazardous Substances and New Organisms Act 1996, and their subsequent amendments.
  - All work practices must meet documented worksite operating procedures. This includes the recording (by electronic or non-electronic means) of activities, events, and decisions.
  - All communications made in relation to this unit standard must be made in accordance with worksite procedures for content, recipient, timing, and method.

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## Outcomes and performance criteria

### Outcome 1

Explain fundamentals of pulp, paper and chemical product testing in a laboratory.

#### Performance criteria

- 1.1 Reasons for laboratory testing are explained in terms of process control, quality assurance and continuous improvement.
- 1.2 Principles of tests of raw materials, and tests for product characteristics that are conducted at the candidate's worksite, are explained in accordance with worksite documentation.
- 1.3 Operation of the testing equipment used in the candidate's laboratory is explained in accordance with worksite documentation.
- 1.4 Hazards associated with sample gathering and laboratory testing are identified, and actions to be taken to isolate, minimise or eliminate the hazard are described in accordance with worksite documentation.

### Outcome 2

Gather samples, and select and apply tests in a laboratory.

Range evidence is required for ten different tests.

#### Performance criteria

- 2.1 Safe work practices associated with selecting and applying tests in a laboratory are identified and used in accordance with worksite documentation.  
  
Range practices may include but are not limited to – isolation procedures, lock-outs, emergency stops, machine guarding, wearing appropriate safety equipment.
- 2.2 Samples are gathered in accordance with worksite documentation.

- 2.3 Tests to be applied in the laboratory are identified in accordance with worksite documentation.
- 2.4 Test equipment in the laboratory is selected and checked in accordance with worksite documentation.
- 2.5 Samples are selected in accordance with worksite documentation.
- 2.6 Tests are applied in accordance with manufacturer's specifications and/or worksite documentation.

### Outcome 3

Record, analyse, and report test data.

### Performance criteria

- 3.1 Test data is recorded, analysed, and results and responses are reported in accordance with worksite documentation.

**This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.**

### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	22 February 1995	31 December 2025
Revision	2	27 January 1997	31 December 2025
Review	3	25 February 1999	31 December 2025
Review	4	18 December 2006	31 December 2025
Review	5	24 October 2014	31 December 2025
Review	6	30 November 2023	31 December 2025

### Consent and Moderation Requirements (CMR) reference

0173

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.