

Title	Condition liquor using BLOX plant for wood pulp manufacturing		
Level	3	Credits	5

Purpose	<p>People credited with this unit standard are able to: explain fundamentals of liquor oxidation; operate and maintain BLOX plant efficiently; and monitor and control the efficient performance of BLOX plant.</p> <p>This unit standard is primarily for people working in chemical recovery operations in the wood pulp industry.</p>
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Classification	Wood Fibre Manufacturing > Pulp and Paper - Chemical Plants
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Available grade	Achieved
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Explanatory notes

- 1 Definitions

BLOX plant refers to a black liquor oxidation plant which is designed to allow intimate contact between air and liquor to oxidise the sulphur in the liquor to a stable thiosulphate.

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 liquor oxidation.

Evidence requirements

- 1.1 Purpose of liquor oxidation is explained in accordance with worksite documentation.
- 1.2 Operating parameters and capability of the BLOX plant are explained in accordance with worksite documentation.
- Range includes but is not limited to – temperatures, flows, densities, plant capacities.
- 1.3 Operating components and process controls of BLOX plants are identified, and their purpose is explained, in accordance with worksite documentation.
- Range agitators, pumps, tanks, air blower, instrumentation, sparge pipe and pipework.
- 1.4 Hazards associated with BLOX plants 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, steam, waste gas, noise.
- 1.5 Chemical reactions occurring within the BLOX plant are described in accordance with worksite documentation.
- Range oxidation, sulphidity.
- 1.6 The consequences of non-conformance with worksite operating procedures are described in terms of the effects of solids in liquor to the boiler, and under and over conditioning on the recovery boiler.
- 1.7 Roles and responsibilities of the BLOX plant operator are described in accordance with worksite documentation.

Outcome 2

Operate and maintain BLOX plant efficiently.

Evidence requirements

- 2.1 Safe work practices associated with BLOX plant operation are demonstrated in accordance with worksite documentation and legislative requirements.
- Range practices may include but are not limited to – plant entry procedures, isolation procedures, lock-outs, emergency stops, machine guarding, wearing appropriate safety equipment.
- 2.2 BLOX plant is set up, started up, operated, and shut down efficiently in accordance with worksite documentation.

2.3 Setting and timely adjustment of operating parameters enables production requirements to be met in accordance with worksite documentation.

Range operating parameters – tank levels, temperature, air flow, liquor flow;
production requirements – emptying of tanks, levels of sulphidity, liquor density through the plant.

2.4 BLOX plant is managed to allow by-passing, batching, and emptying of tanks, while maintaining product quality and environmental requirements.

2.5 Preventative maintenance and cleaning requirements are carried out in accordance with worksite documentation.

Outcome 3

Monitor and control the efficient performance of BLOX plant.

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.

Range control parameters – tank levels, temperature, air flow, liquor flow;
process requirements – sulphide analysis, solids, environmental requirements.

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 – environmental limits, sulphidity levels;
equipment faults and malfunctions – electrical, mechanical, instrumentation.

3.3 Output liquor meets the requirements of worksite documentation for sulphide content.

3.4 Emissions are controlled in accordance with worksite documentation.

3.5 Production rate is regulated in accordance with process requirements.

3.6 Production, maintenance, and quality records are completed in accordance with worksite documentation.

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.