Title	**Evaluate finger jointer performance variables**		
Level	**5**	**Credits**	**35**

Purpose	People credited with this unit standard are able to: analyse uses and specifications of edge-to-edge and face-to-face finger joints; evaluate tooling options for optimum finger jointing operation; evaluate glue options to minimise adhesive wastage and maximise product quality; optimise glue systems on a specific finger jointer to maximise jointer performance and ensure product quality; and analyse product flow factors that influence finger jointer performance.

Classification	Solid Wood Manufacturing > Finger Jointing

Available grade	Achieved

Guidance Information

1 This unit standard is intended for work-based assessment. The range statement of performance criterion 5.3 is indicative and dependent on enterprise and worksite specific equipment, procedures, and practices. For this evidence requirement candidates are to be assessed against as many items in the range note as are available at their worksite.

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 requirements (where these exceed the 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.
- 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 evidence of communications gathered in relation to this unit standard must be in accordance with worksite procedures for content, recipient, timing, and method.

3 Definitions

Optimise refers to improving productivity and product quality.

Worksite policies and procedures refer to documented policies and to documented or other directions provided to staff. These include, but are not limited to, ways of managing health and safety, environmental considerations, quality, and production, and must conform to legislation. Examples include standard operating procedures, company health and safety plans, on-site briefings, and supervisor's instructions.

Outcomes and performance criteria

Outcome 1

Analyse uses and specifications of edge-to-edge and face-to-face finger joints.

Performance criteria

1.1 Analysis shows the suitability of edge-to-edge and face-to-face joints for a range of wood products.

Range wood products may include but are not limited to – posts, beams, portals, mouldings, table tops, panels, stair treads; evidence of three edge-to-edge and three face-to-face joints are required.

1.2 Analysis demonstrates the impact of the joint geometry on the wood product performance.

Range joint geometry may include but is not limited to – finger length, tip size, glue surface area, number of fingers, joint orientation; evidence of four is required.

Outcome 2

Evaluate tooling options for optimum finger jointing operation.

Performance criteria

2.1 Evaluation determines how wood fibre wastage will be minimised by the selection of optimum finger joint length and minimum trim saw off cuts.

2.2 Evaluation includes tooling cost comparisons to ensure selection of the most cost effective option.

2.3 Evaluation of tooling performance includes the cost and longevity of tool life.

2.4 Evaluation includes newly available technology improvements.

2.5 Evaluation determines optimal tool changing schedules to maximise tool life, and these schedules are documented.

2.6 Communication with management and operational staff regarding selected tooling options is completed in accordance with worksite policies and procedures.

Outcome 3

Evaluate glue options to minimise adhesive wastage and maximise product quality.

Performance criteria

3.1 Evaluation determines how glue wastage will be minimised through management of glue preparation and minimal residual glue at the joint.

3.2 Evaluation identifies glue type options for specific products, or customers, for optimum performance.

3.3 Evaluation determines the best glue spread for varying glue types.

3.4 Evaluation confirms glue curing options for optimum performance of the final product.

3.5 Communication with management and operational staff regarding selected glue options is completed in accordance with worksite policies and procedures.

Outcome 4

Optimise glue systems on a specific finger jointer to maximise jointer performance and ensure product quality.

Performance criteria

4.1 Evaluation determines optimum glue temperature, pressure, and flow.

4.2 Applicator methods are compared, and the best applicator system is selected for a specific finger jointer and its products.

4.3 Evaluation determines preparation and/or mixing systems are being operated to ensure glue delivery is optimised.

Range viscosity maintained, even spread, gel times maintained, minimum moisture content.

4.4 Communication with management and operational staff regarding selected glue system is completed in accordance with worksite policies and procedures.

Outcome 5

Analyse product flow factors that influence finger jointer performance.

Performance criteria

5.1 Analysis determines infeed system capability, and maximises lineal infeed, for specified finger jointed products.

5.2 Analysis of cutter speed and feed speed adjustment options determines the best configuration of these for specified finger jointed products.

5.3 Analysis of process variables following the glue applicator identifies the best settings for these variables, to ensure maximum throughput and product quality is not compromised.

Range process variables following the glue applicator may include but are not limited to – turn down rate, alignment of the crowder, press times and press pressures, outfeed drying times.

5.4 Communication with management and operational staff regarding process variables is completed in accordance with worksite policies and procedures.

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	18 December 2006	31 December 2012
Rollover and Revision	2	15 April 2011	31 December 2013
Review	3	21 June 2012	31 December 2020
Review	4	25 June 2020	31 December 2020

Consent and Moderation Requirements (CMR) reference	0013

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