Title	**Tip saw teeth with stellite or high-speed steel**		
Level	**4**	**Credits**	**10**

Purpose	People credited with this unit standard are able to: demonstrate knowledge of hazards and safe work practices associated with tipping saws with stellite or high-speed steel; prepare saws for tipping; tip saw teeth; and grind saw teeth to size.

Classification	Solid Wood Manufacturing > Saw Doctoring

Available grade	Achieved

Guidance Information

1 Legislation
Health and Safety at Work Act 2015.
Resource Management Act 1991.

2 Definitions
Accepted industry practice refers to approved codes of practice and standardised procedures accepted by the wider wood manufacturing industry as examples of best practice.
Tipping refers to the fixing of a metallic tip to saw teeth.
Workplace procedures refer to documented policies and procedures set by the organisation carrying out the work, and to documented or other directions provided to staff, and applicable to the tasks being carried out. 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, on-site briefings, supervisor's instructions, and procedures to comply with legislative and local body requirements relevant to the wood manufacturing sector.

3 Range
Saws – circular, frame, band saws;
evidence is required of one saw type and one tip type.

4 Assessment information
All activities and evidence must be in accordance with workplace procedures and accepted industry practice.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of hazards and safe work practices associated with tipping saws with stellite or high-speed steel.

Performance criteria

1.1 Hazards associated with tipping saws with stellite or high-speed steel tips are identified and actions to be taken to manage the hazard are described.

Range hazards may include but are not limited to – hot objects; moving equipment; grinding wheel disintegration; loose grinding wheel; exposure to grinding coolant; toxic fumes and gases from tip cleaning agents, stellite rod, and fusion casting during the brazing process.

1.2 Safe work practices associated with tipping saws with stellite or high-speed steel tips to saws are identified and applied.

Range practices may include but are not limited to – isolation procedures, lock outs, emergency stops, machine guarding, the wearing of appropriate safety equipment.

Outcome 2

Prepare saws for tipping.

Performance criteria

2.1 Saw and work areas are cleaned of all foreign matter that could affect tipping operations.

2.2 Teeth are assessed for wear and damage, and teeth are re-profiled where indicated.

2.3 Tipping equipment is checked for wear and lubricated in accordance with manufacturer’s requirements.

Range may include but is not limited to – welding equipment, dial gauges, micrometre, calipers, tweezers, safety equipment, cleaning agent.

2.4 Saw is set up in the tipping machine in accordance with manufacturer’s specifications.

2.5 Tooth point are deburred if required.

2.6 Teeth are deburred.

2.7 Tips are selected for size and type to suit saw application.

Outcome 3

Tip saw teeth.

Performance criteria

3.1 Tips and seats are cleaned of all foreign matter that could affect tipping operations.

3.2 Tipping equipment is set up and operated in accordance with manufacturer's specifications.

3.3 Tips are welded so that they adhere to the tooth.

3.4 Heat affected area is annealed.

3.5 Slag is removed from welded area.

3.6 Each tip is checked for sufficient material for side dressing to the required kerf.

Outcome 4

Grind saw teeth to size.

Performance criteria

4.1 New teeth are ground to the same size as the original teeth.

4.2 Teeth are side ground to required radial and tangential angles.

4.3 Grinding solutions are handled and stored in accordance with Safety Data Sheets.

Planned review date	31 December 2024

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	24 October 1996	31 December 2019
Review	2	10 February 1999	31 December 2020
Review	3	18 December 2006	N/A
Review	4	24 September 2020	N/A

Consent and Moderation Requirements (CMR) reference	0013

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

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.