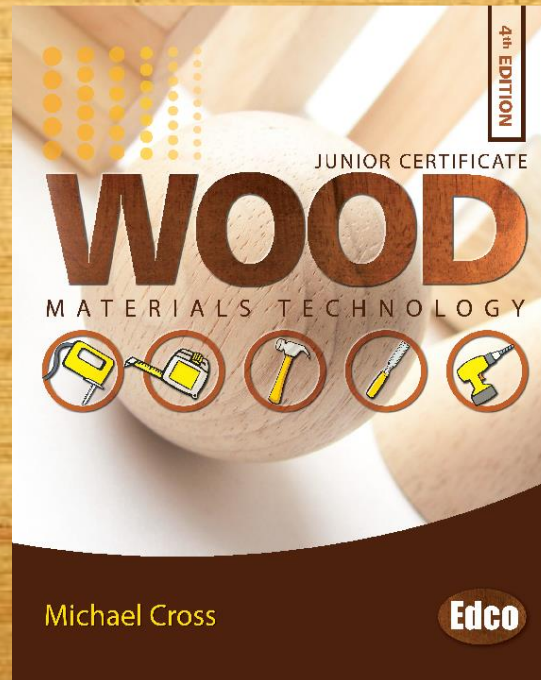


WOOD MATERIALS TECHNOLOGY

4th Edition



Chapter 11

Conversion of Timber



Felling timber

Felling



Transporting



Converting logs

Horizontal bandsaw



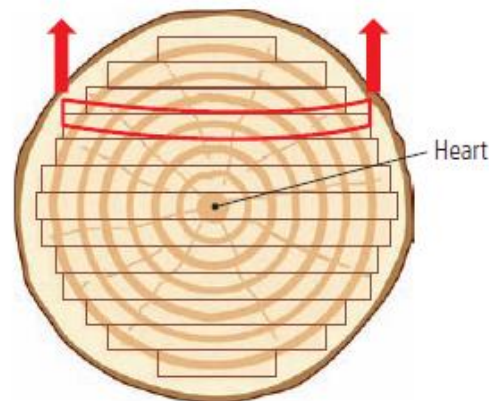
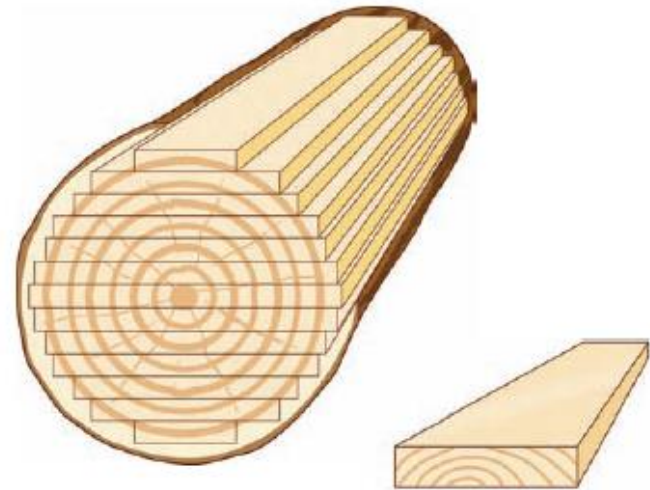
Reasons to convert timber

- Allows wood to dry faster
- Provides wood of usable size and shape
- Allows the quality of the timber to be seen

Through and through sawing

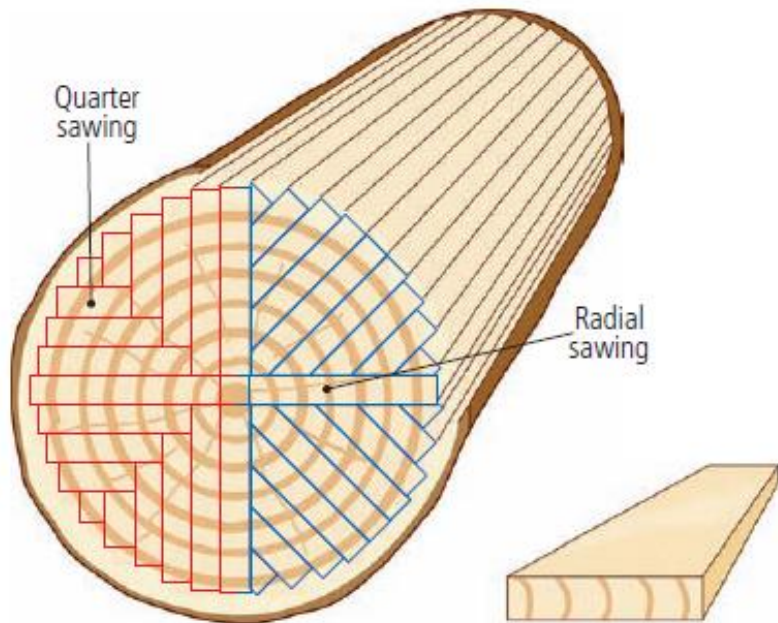
Plain/slash sawing

- Low cost
- Little waste
- Fast and easy method
- Boards likely to cup



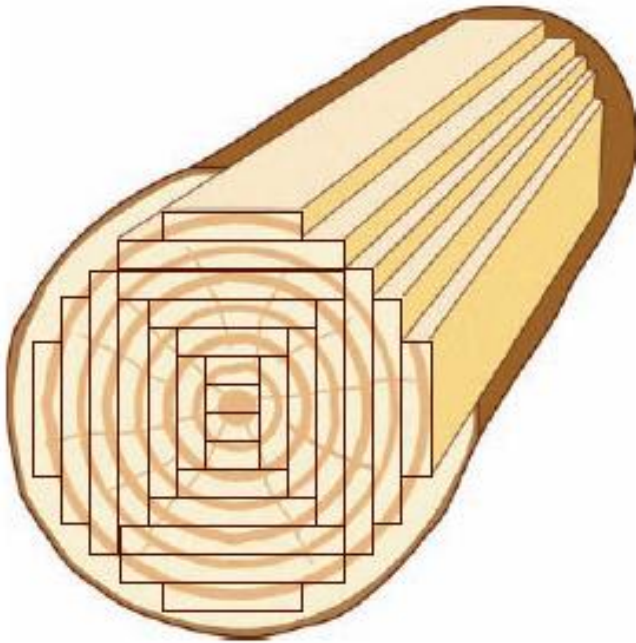
Quarter sawing

Radial/quarter sawing



- Attractive grain pattern
- Boards more stable
- Boards shrink less
- Boards wear evenly – flooring
- Labour-intensive
- Expensive
- More waste

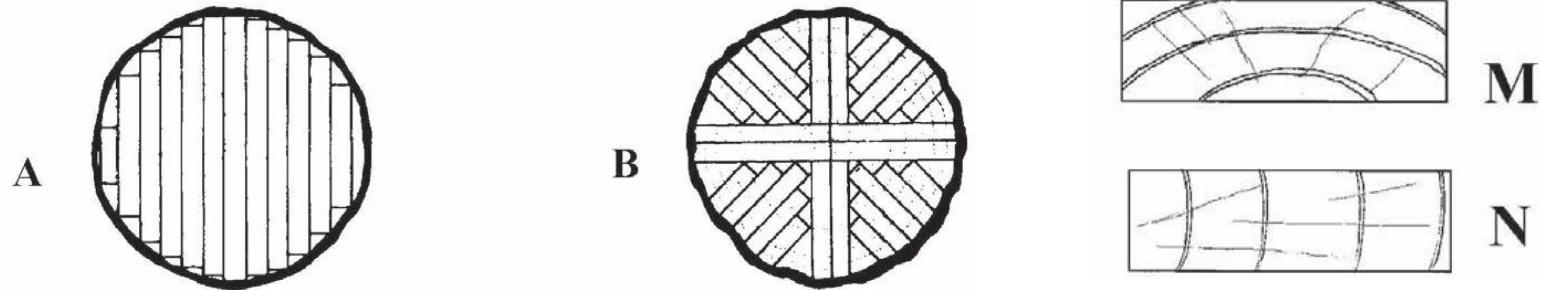
Tangential sawing



- Attractive flame figure produced
- Boards shrink less
- Labour-intensive
- Expensive
- Boards don't split easily
- More waste produced

Exam question

- 1 Shown in the diagram are two methods for timber conversion.



- (a) Name the two methods of conversion shown in the diagrams.
- (b) State two advantages and two disadvantages of each method.
- (c) The diagrams show the ends of two boards, M and N. Which of the boards is most likely to cup? Give a reason for your answer. Describe, using a neat freehand sketch, the direction of cupping.

(JC, HL, 2005)

Sample answer to exam question

1 (a) The methods of conversion shown are:

- A Through and through sawing, also called slash or plain sawing.
- B Quarter sawing or radial sawing.

(b) Through and through sawing

Advantages

- There is very little waste from this method
- It gives wide boards
- It is a cheap and easy method

Disadvantages

- The boards are prone to cupping
- The boards have no particular grain pattern
- There would be a lot of sapwood in many boards so more likely to rot due to fungi and insects

Sample answer to exam question

1 (b) Quarter sawing

Advantages

- The boards are stable
- The boards are hard-wearing and used in flooring

Disadvantages

- More labour required, as the logs need to be turned
- More expensive
- More waste produced

Sample answer to exam question

1 (c) The board most likely to cup is board M. This is because when the wood begins to dry, the cells shrink.

The shrinkage occurs along the rings, which tends to pull the board into a curved shape as a result.

The other board, N, will have more even shrinkage because of the arrangement of the rings as shown.

