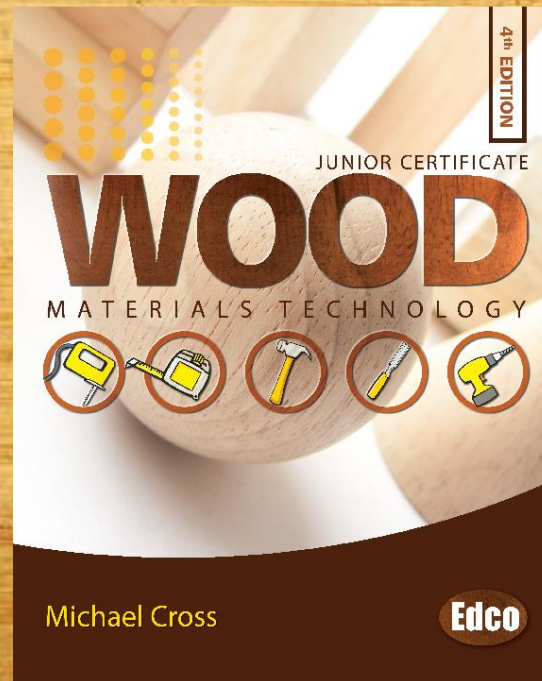


WOOD MATERIALS TECHNOLOGY

4th Edition



Chapter 13

Diseases and Defects

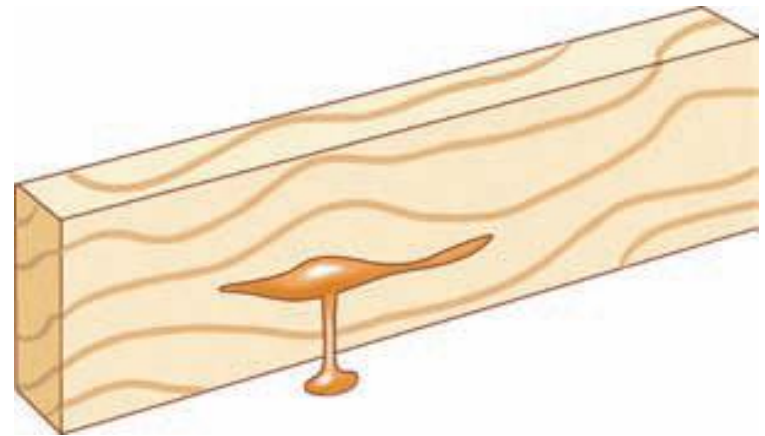


Knots



— Live knot

Resin pocket



— Dead knot

Shakes

– Radial shakes



Heart shake



Star shake



Frost shake

Winter wood separates from summer wood



Cup shake



Ring shake

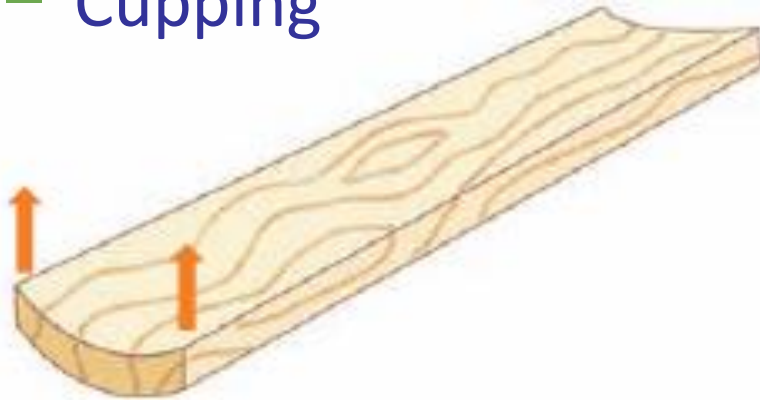
– Tangential shakes

Waney edge

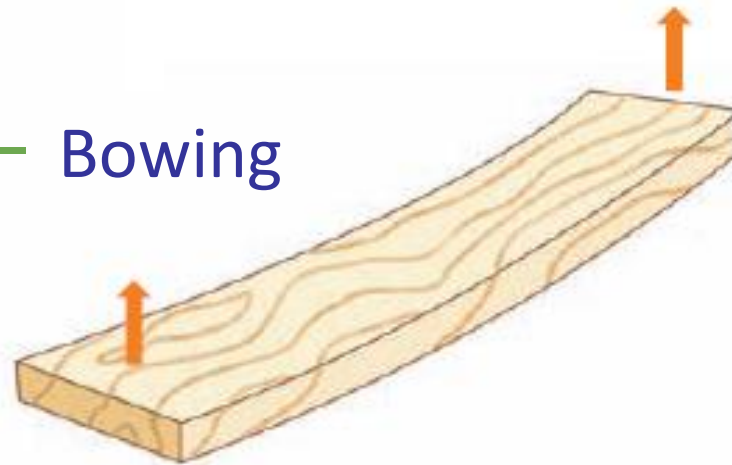


Artificial defects – seasoning

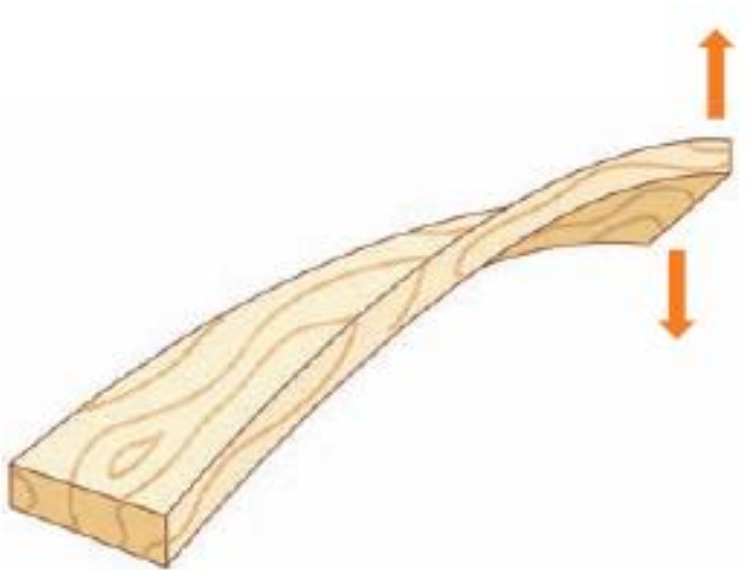
– Cupping



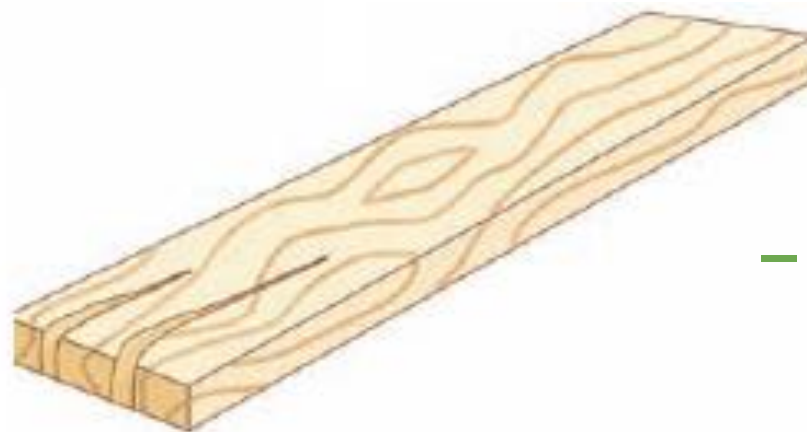
– Bowing



Artificial defects – seasoning



– Twisting/warping

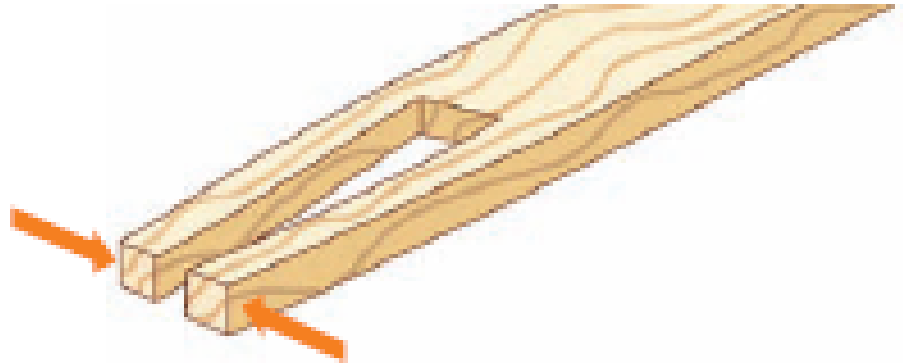
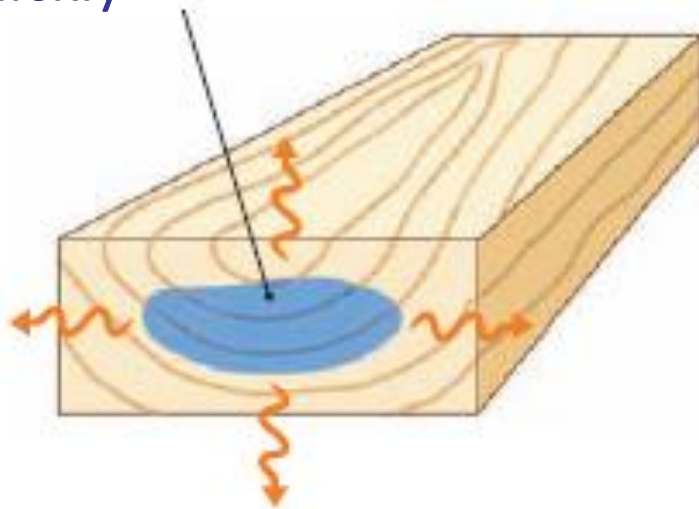


– End splitting

Artificial defects – seasoning

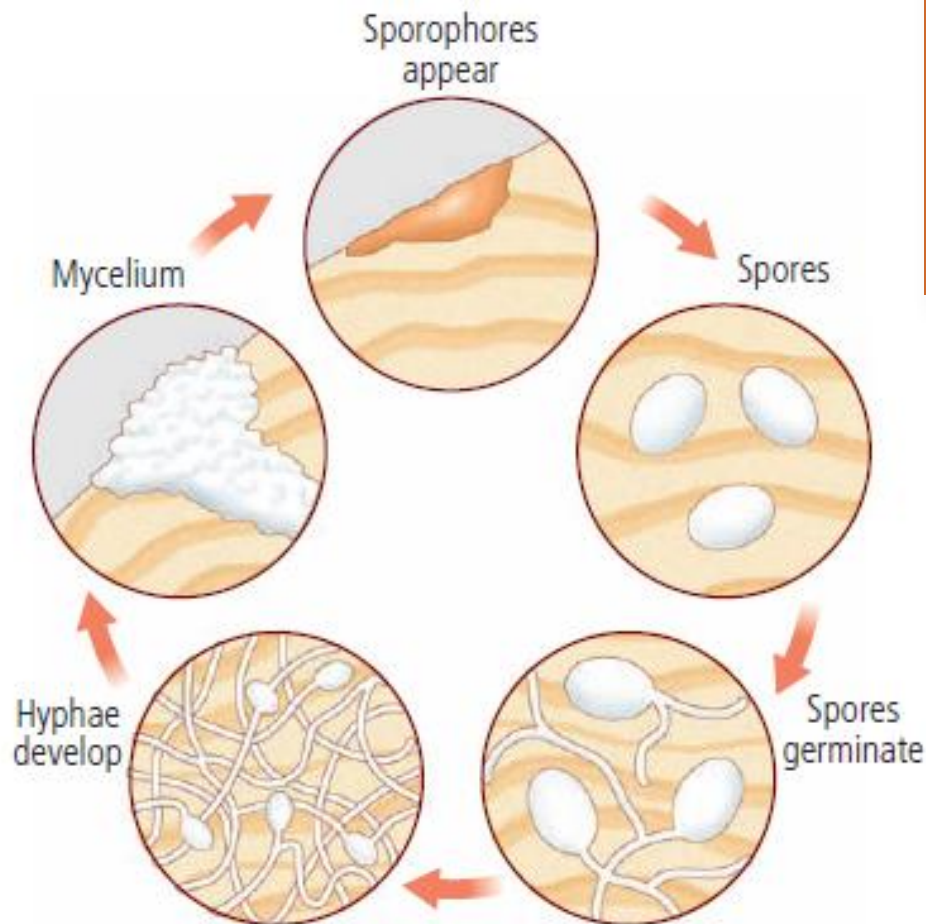
Case hardening

- Moisture is trapped in the centre if surfaces dry too quickly



- Boards bend when tension is released

Fungal life cycle



Conditions for fungal growth

Moisture	Moisture content above 20%
Food supply	The wood
Oxygen	Particularly air that is still and warm

Types of rot

- Wet rot

- Occurs outside
- Doors and window frames
- White residue



- Dry rot

- Under wood floors
- Musty smell
- Poor ventilation
- Charred wood appearance



Dry rot

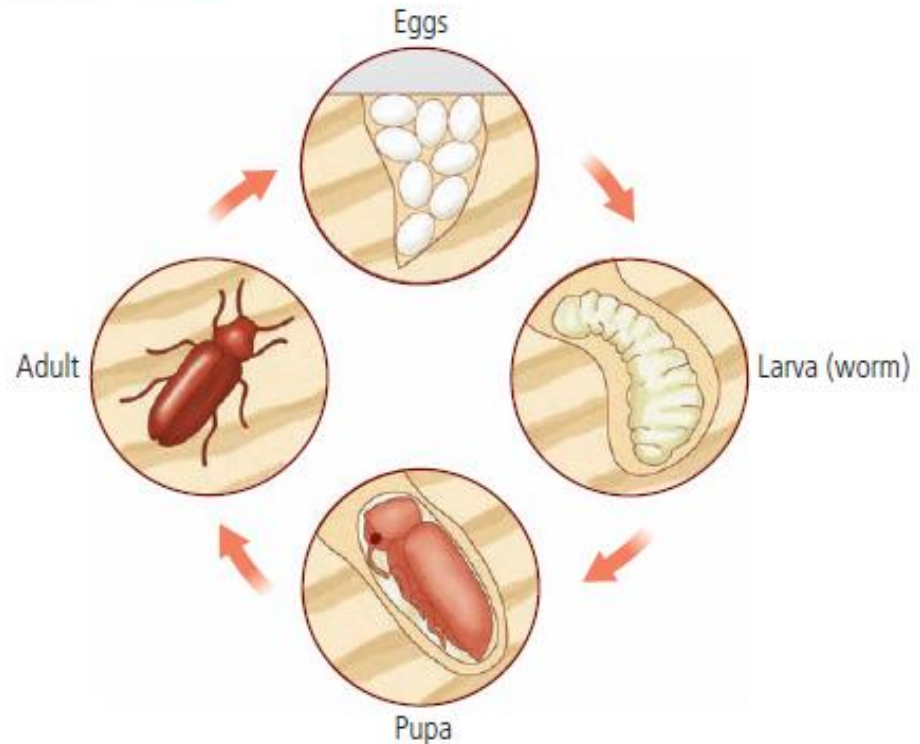
- Treatment
 - All infected wood removed and 500mm beyond
 - All blockwork and wood treated with fungicide
 - The cause of infection must be found and fixed
 - All new timber must be treated with preservative



Insect attack

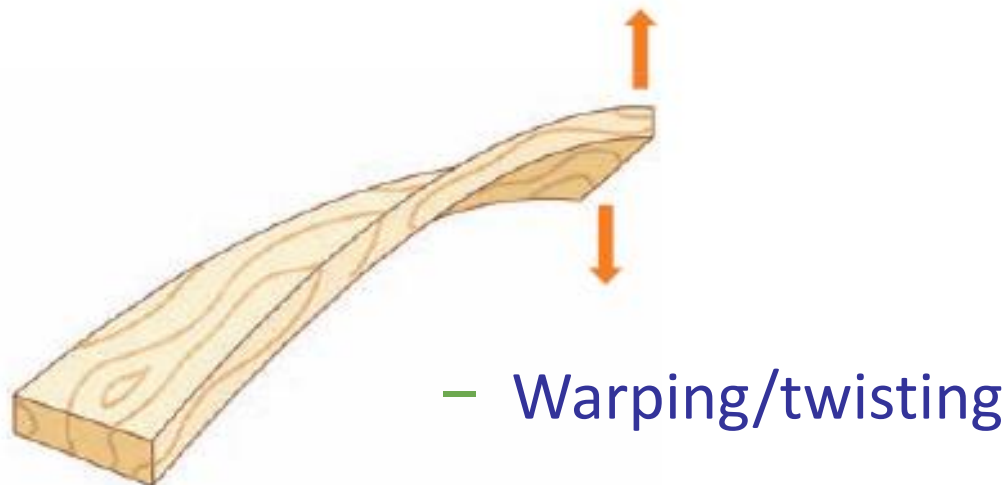
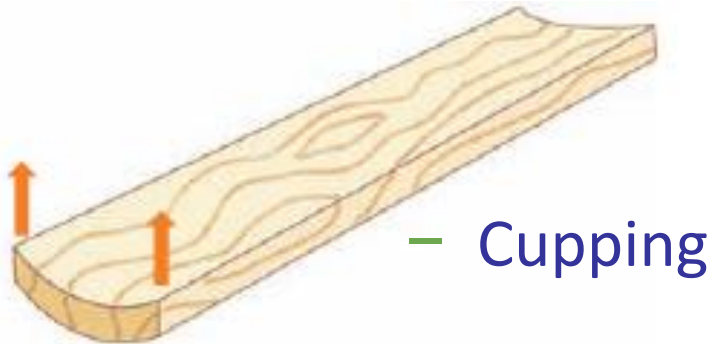
Insect life cycle

- Eggs are laid in wood
- The larva (worm) hatches and begins eating the wood
- When grown, the larva makes a cocoon (pupa) and changes into the adult beetle
- Adult emerges at the surface

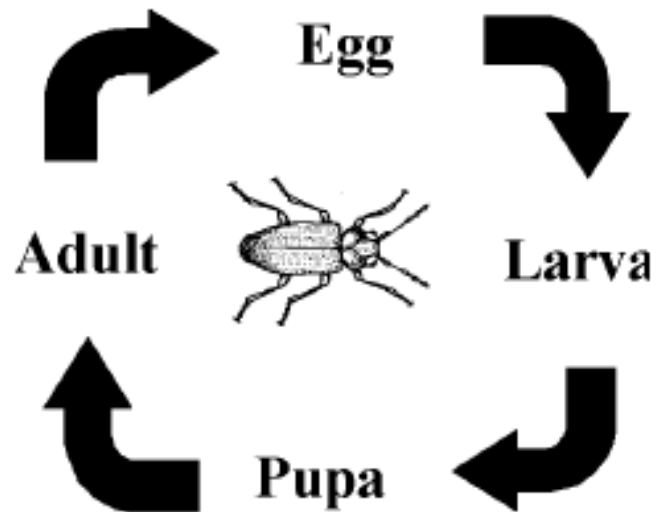


Quiz

- Name the defects shown in the diagrams



- The life cycle of a wood boring insect is shown. At which stage does the most damage occur?



- Most damage occurs while the insect is at the larva stage
- The larva bores tunnels under the surface of the wood

- List the conditions necessary for a fungal attack to occur in wood



- Conditions
 - A moisture content above 20%
 - A supply of food (wood)
 - Oxygen