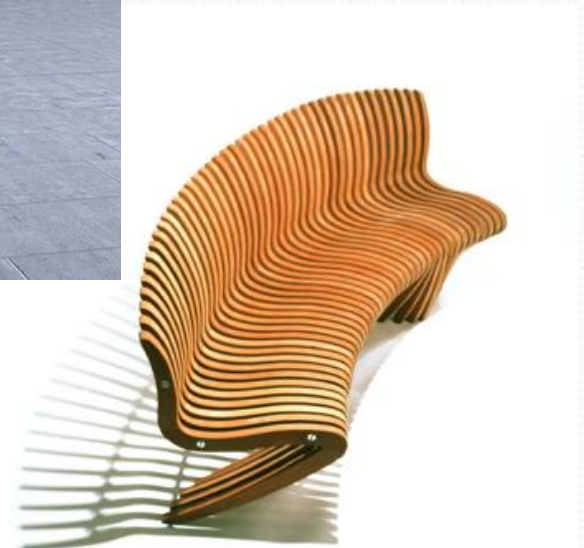


# Bending and Laminating Wood

# Bending Projects

## CHAIRS



# Bending Projects



TABLES  
+  
DRESSERS





# Timber suitable for bending

- **Timber should be free from knots, splits and shakes.**
- **Any flaws will cause weakness in the bend.**
- **Most timbers can be used in bending but some are more bendable than others like**
- **Examples; Ash, Oak, Sycamore and Beech.**

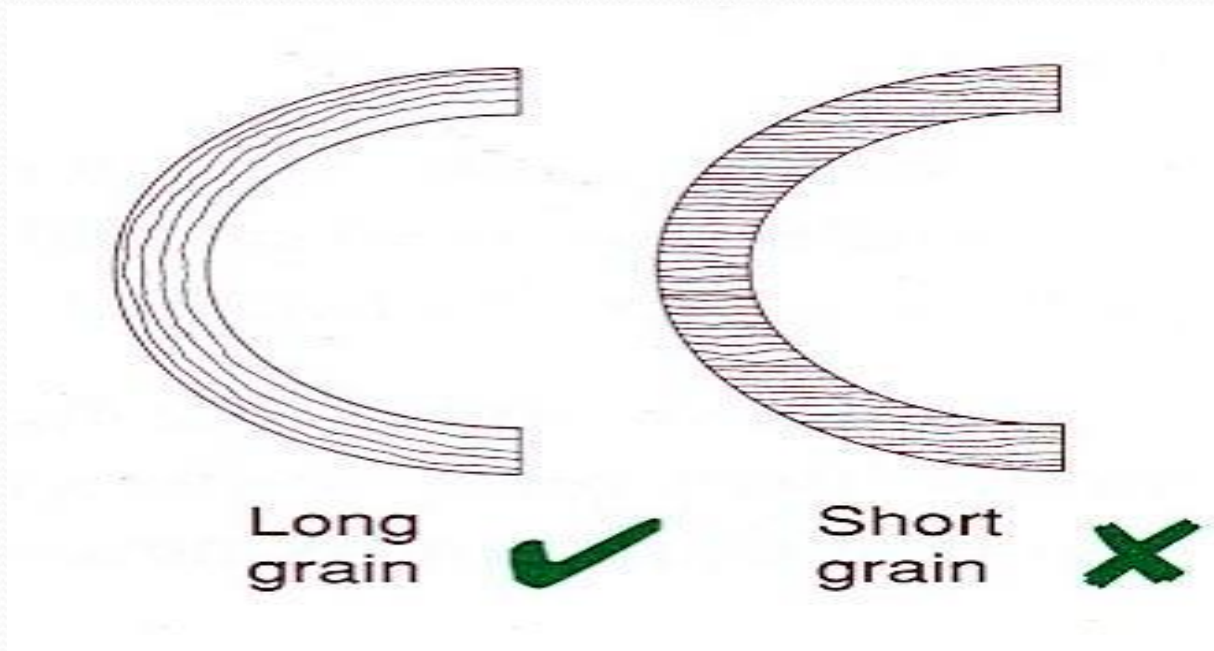
# Methods used to curve timber

1. **Cutting from a solid piece of Wood:** cutting the curve from a solid piece of timber
2. **Steam bending wood:** Steaming wood to the required curve
3. **Laminating Wood:** Gluing thin veneers (Strips of thin wood) together to form the curve



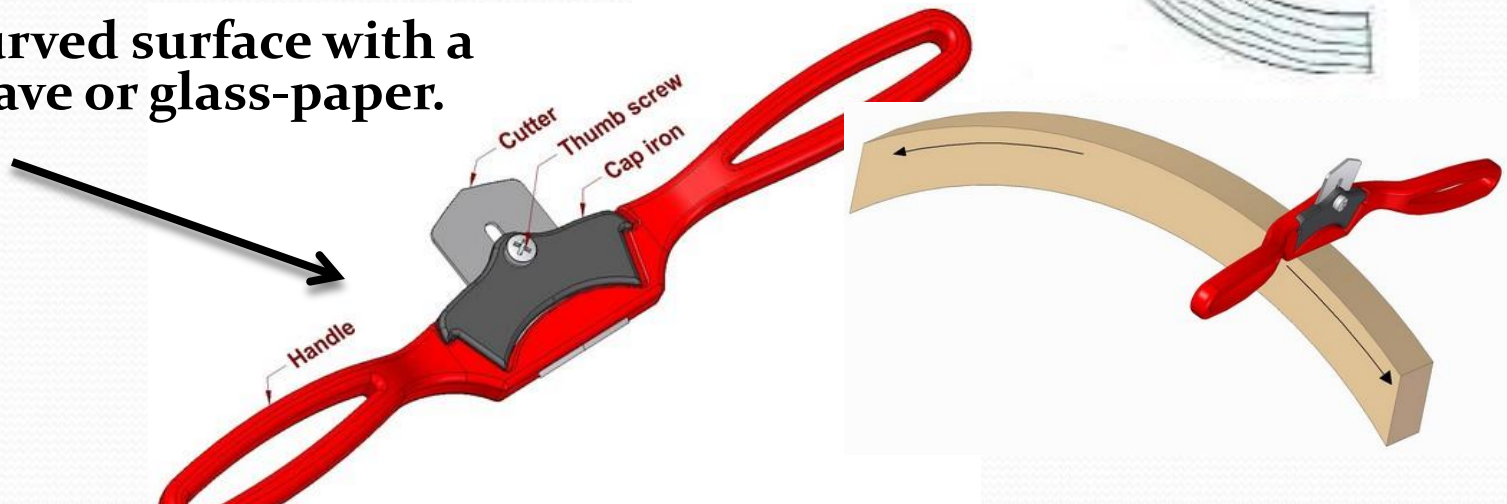
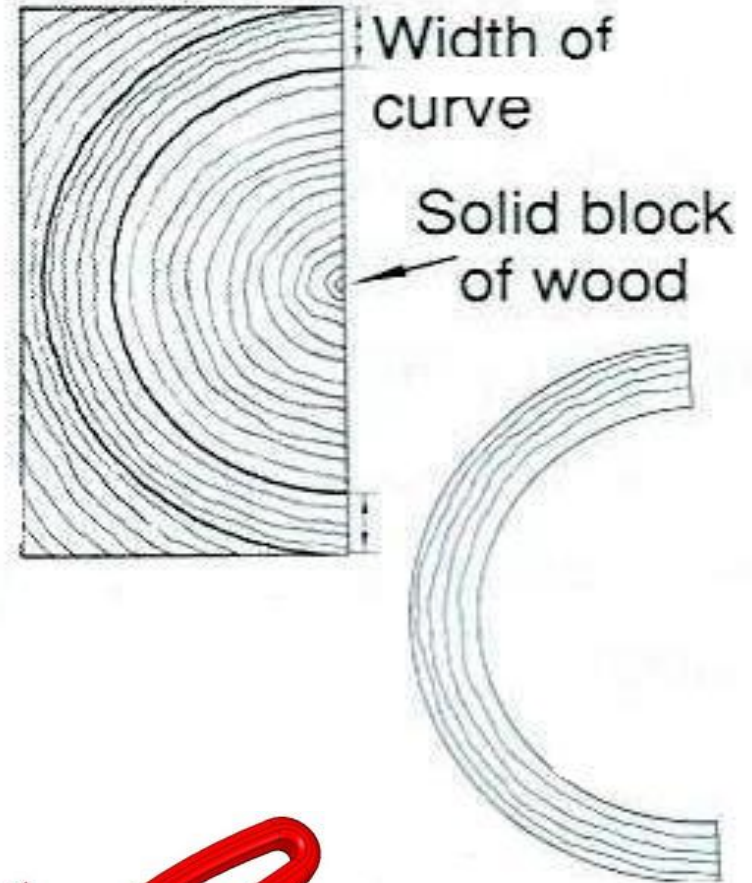
# 1. Cutting from a solid piece of wood

- Short-grain wood is likely to break along the grain
- Strong long grained timber resists breakage more



# 1. Steps

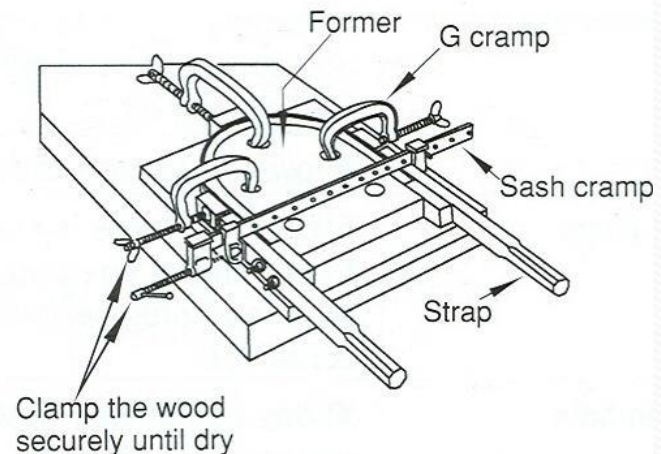
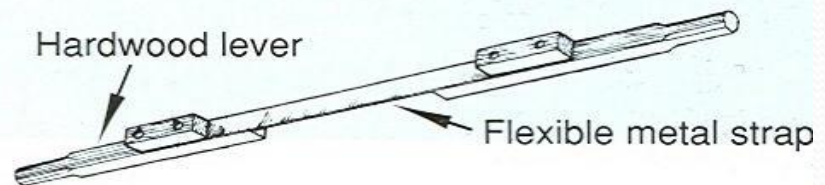
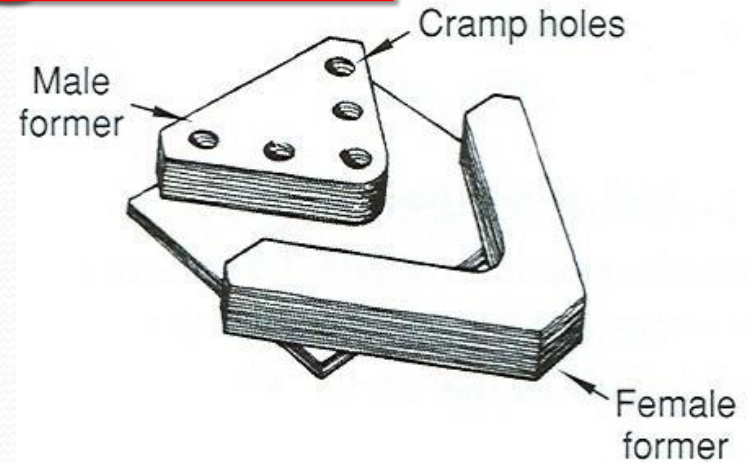
1. Prepare the block of wood to a width and thickness of the curve you want.
2. Mark out the curve using a "template"
3. Cut curves using the bandsaw, coping saw or bow saw.
4. Finish curved surface with a Spokeshave or glass-paper.





## 2. Steam Bending Wood

- By steaming wood you soften the fibres of the wood making it flexible and bendable.
- The wood is then forced around a **former** (male and female) and clamped into position.
- Former is made from MDF
- The outside of the wood is reinforced (extra support) with a metal strap.





# Steam Generator

**Steam generator:** Heats water to make steam

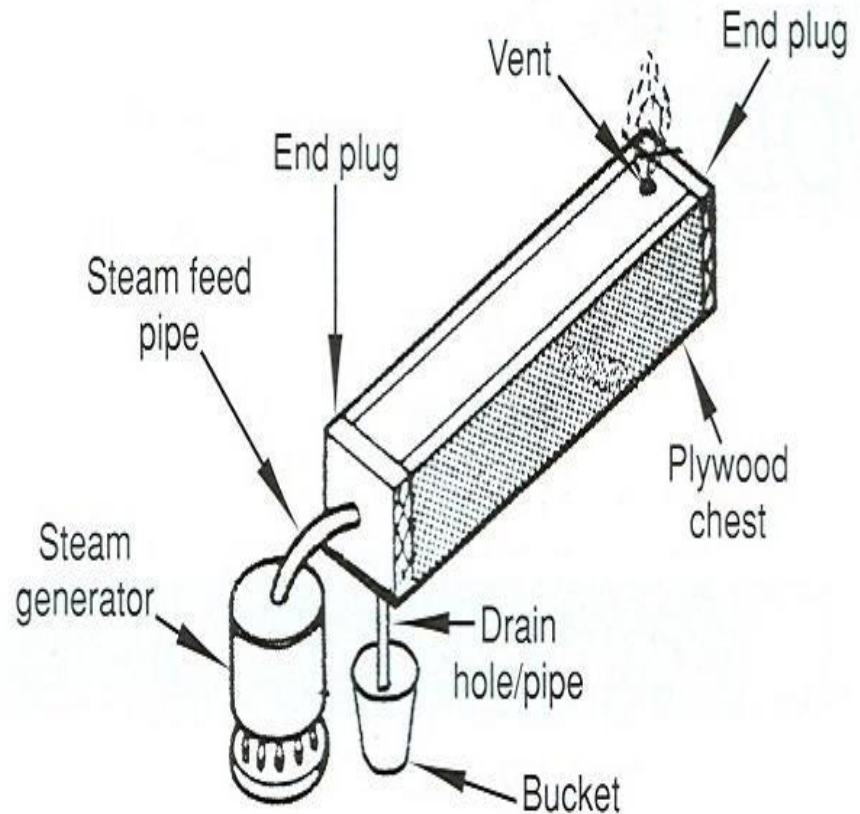
**Steam Feed Pipe:** Carries steam from generator to the steam chest.

**Steam Chest :** Holds the wood being steamed

**Vent :** allows the release of steam

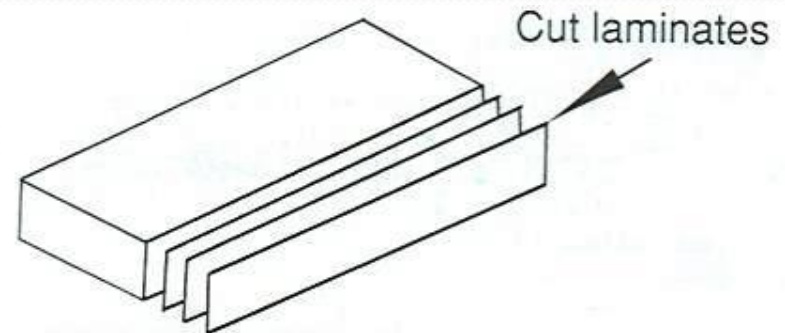
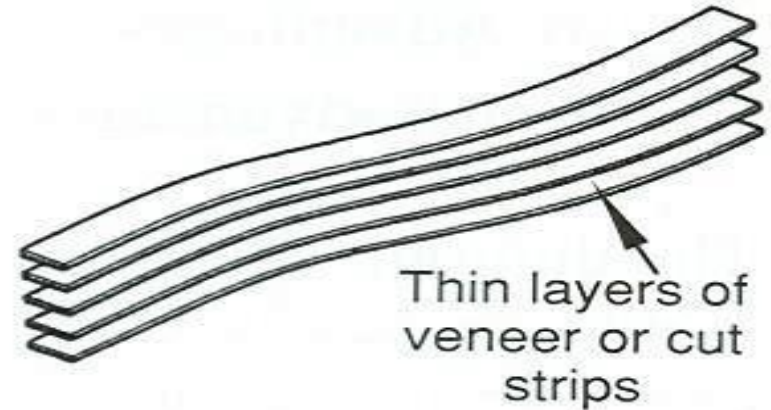
**End Plugs :** Seals the chest to keep steam in.

**Drain hole :** Allows condensed water to run off (slope)



# 3. Laminating Wood

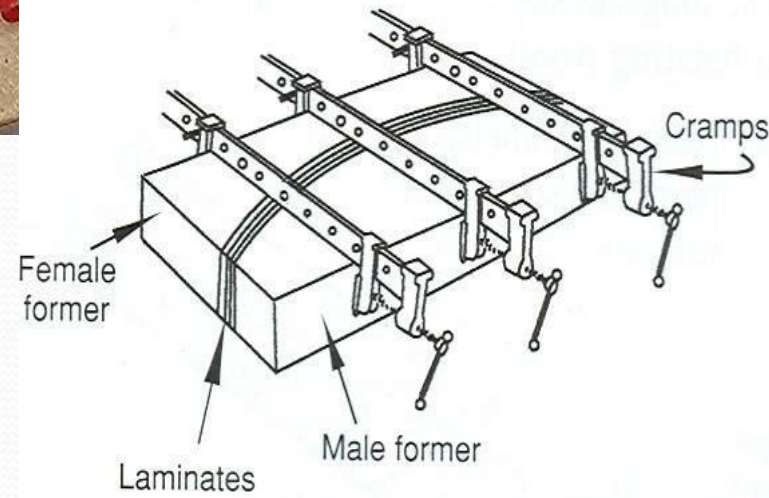
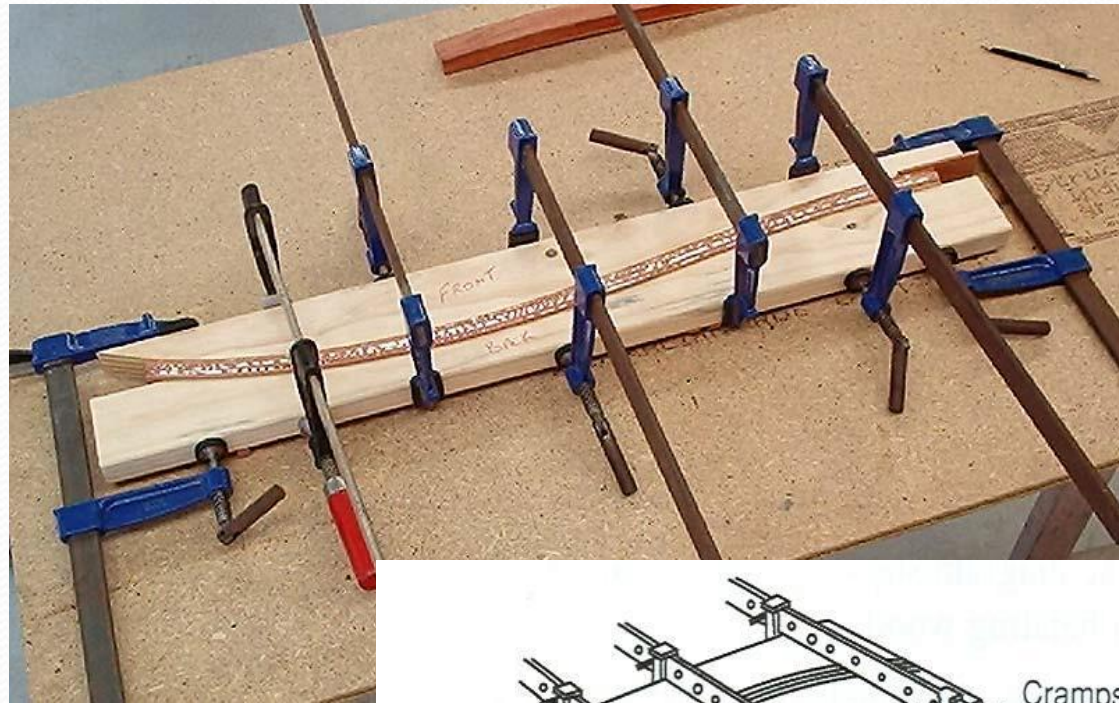
- When making small curves it is best to laminate several (many) layers using thin strips of wood called “veneers”
- No steaming is required for small bends.
- Max thickness of laminates (veneers) is 3mm.





# Steps in Laminating Wood

- Apply glue to the laminates (not to the outside pieces as they will stick to the formers.)
- Clamp the formers together.
- Leave for 8-12 hours and remove the formers
- <http://www.youtube.com/watch?v=tTNkckKE36U>



# Adhesives (Glue) for Laminating

- **PVA** (**P**oly**v**inyl **A**cetate): is strong and is not expensive.
- **Urea Formaldehyde**: is strong, sets slow and resistant to weather and preservatives.
- **\*\* Epoxy Resin** is the best choice as it is very strong, waterproof and contains no water so laminates will not swell.