

Why are wood joints used when working with timber?

Wood joints are a traditional method of joining timber. There are a range of different joints that can be used for different situations. These provide a variety of levels of strength. Joints are often glued to make them secure and permanent.

Mitre Joint: This joinery option connects two ends that get cut at a 45° degree angle. The advantage of using this approach involves the strength of the corner. You receive a seamless look that does not show any end grain.



Comb/Finger Joint:

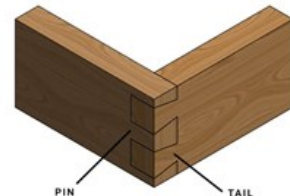
This joint works at the end of two timber pieces to build a seamless right angle. You cut out a series of symmetrical slots to form rectangular projections called fingers. When you adhesive, the fingers get inserted to create a permanent bond that results in a solid corner.



Dovetail Joint: Woodworkers use this option to add strength to a corner. It uses a series of interlocking pins and tails to create a resilient edge, that can be used for furniture, cabinet making and framing.



DOVETAIL JOINT



Dowel Joint: This joint is cut at 90° and is reinforced using wooden dowels. It requires you to drill a hole between the two pieces. The two pieces get connected with dowels to create a durable, flat surface.



Butt Joint: This joint works at the end of two timber pieces, to build a seamless right angle. It is cut at 90°, but lacks strength. Additional fixings such as panel pins and dowels can be used to strengthen the joint.



What is isometric projection?

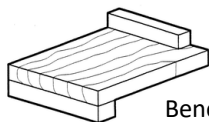
An isometric drawing is a 3D representation of an object, room, building or design on a 2D surface. One of the defining characteristics of an isometric drawing, when compared to other types of 3D representation, is that the final image is not distorted.

When joints are cut they are glued using Polyvinyl acetate (PVA). It is important to clamp wood joints together firmly while the glue dries. This ensures contact between surfaces, creating a strong bond. Once it is dry, the storage concept can be finished using abrasive paper/linisher and then bees wax.

Tools and machines you will use.



Coping saw

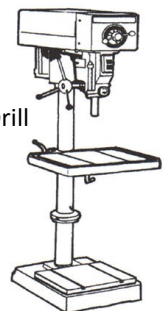


Bench Hook

Mitre Saw



Pillar Drill



What is Pyrography?

Pyrography, commonly known as wood burning. This is the art of drawing and writing using a burning tool for etching designs onto surfaces, usually wood.

Classification of Woods:

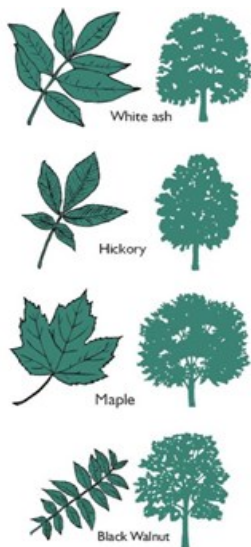
Classifying wood as either a hardwood or softwood comes down to its physical structure and makeup. It is overly simple to think of hardwoods as being hard and durable, compared to soft and workable softwoods. This happens to be generally true, but there are exceptions. A yew tree is a softwood tree, yet its wood is very hard and a balsa tree is a hardwood, yet its wood is softer than softwoods.

Hardwood:

Hardwood comes from angiosperm or

flowering plants, such as oak, maple, ash, mahogany, beech or walnut.

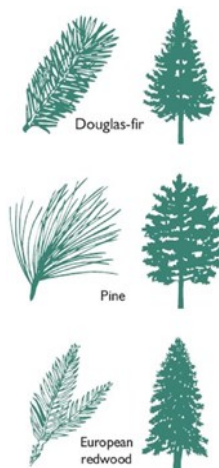
These deciduous trees are slow growing and have broad flat leaves, which they lose in the winter. Their seeds are covered with either a skin or shell. They have vessel elements that transport water throughout the wood. Under a microscope, these elements appear as pores. The variety of colours, textures and grain patterns makes for some beautiful and interesting looking furniture, flooring and sports equipment. The downside to hardwoods is their price.



Softwood:

Softwood comes from gymnosperm

trees, usually evergreen conifers, like pine, cedar or spruce. These coniferous trees are quicker growing and have needle like leaves, which they keep all year (evergreen). Their seeds can be found in cones. Most coniferous trees grow fast, straight and are generally less expensive than hardwoods. Medullary rays and tracheids transport water and produce sap. When viewed under a microscope, softwoods have no visible pores. They are used in woodworking, construction and furniture.



Recyclability:

A commonly asked question: is wood recyclable? The answer is yes, wood is recyclable. Although wood is not accepted in your typical household recycling bin. Wood is accepted at your local household waste recycling centres and wood recycling establishments.

The wood recycling process helps to save trees and reduce the environmental impact of cutting down more trees, which in turn reduces air and water pollution too. Wood recycling plants redirect wood waste away from landfill, so that this natural material can be repurposed into a long list of things, including:

- . Domestic furnishings.
- . Panel boards.
- . Biomass.
- . Mulches, composts and coverings.
- . Landscape surfaces.

The mark of responsible forestry.



Hardwoods vs Softwoods

Most hardwoods have a higher density than most softwoods.
Hardwood is typically more expensive than softwood.
Hardwood has a slower growth rate.
Hardwoods shed their leaves over a period of time in autumn and winter.

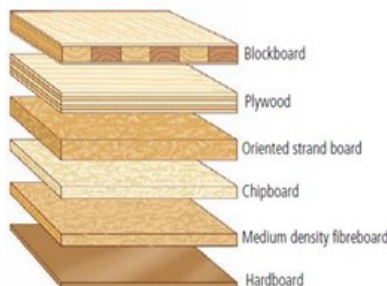
Hardwoods vs Softwoods

Most softwoods have a lower density than most hardwoods.
Softwood is typically less expensive than hardwood.
Softwood has a faster growth rate.
Softwoods tend to keep their needles throughout the year.

Man-made Board:

Manmade boards are commonly known as manufactured boards. They are used in

the construction industry, for interior fittings and furniture. They are more stable than natural woods and are less likely to warp and twist out of shape. They are made from wood fibres or particles, which are bonded together under pressure with adhesive. The three main types are; plywood (laminated), particle boards and fireboards.



Sustainable:

Wood is one of the most sustainable and environmentally friendly construction materials available. This is due to its absorption of carbon dioxide whilst growing, adaptability as a product and recyclability or use as a biofuel. Wood is the most eco friendly material we use.