

Design & Manufacture

Homework 24

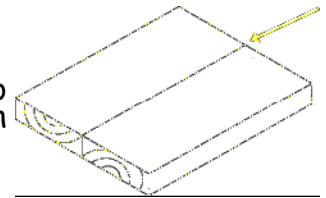
Wood joints

The word fabricate means to join together.

Most wooden products are held together with adhesive. Adhesive works very well when the edge of a piece of wood is being glued to the edge of another piece of wood (side-grain to side-grain). A solid wood table top is made this way.

Rubbed joint

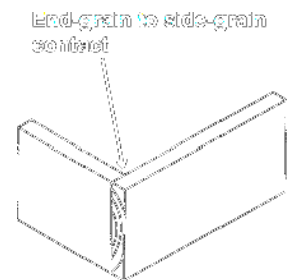
Adhesive is put between the two edges. They are then rubbed together to spread the adhesive evenly. The boards are lined up and held together with sash cramps



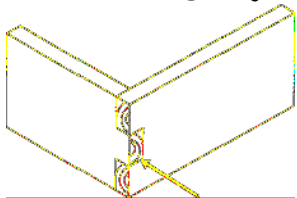
If, however, you are making a framework or box and need to join end-grain to side-grain, adhesive on its own will be too weak. By cutting joints, side-grain surfaces on one piece of wood can be made to come in contact with side-grain surfaces on the other piece of wood. The side-grain to side-grain contact means that the adhesive will now be stronger.

Butt joint

This is a very weak joint unless it is strengthened with pins or screws

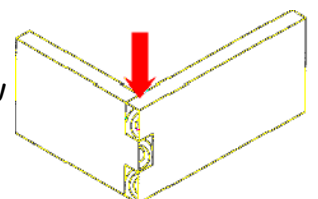


Comb or Finger joint

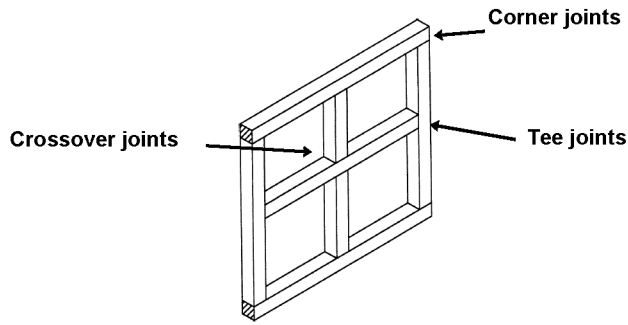


Side-grain to side-grain contact for extra strength

The joint is also mechanically stronger. Any force in the direction of the arrow will not push the joint apart even if there is no adhesive holding it together.



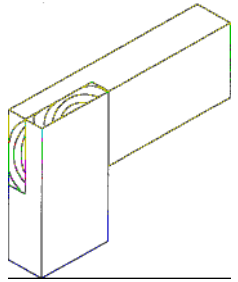
Framework Joints



Corner Joints

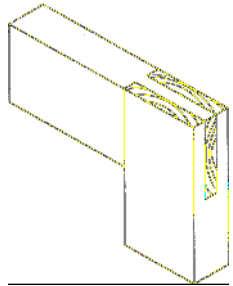
Corner Halving

Used for lightweight frames and frames that are to be covered by boarding e.g. a door. The joint is quick and easy to cut



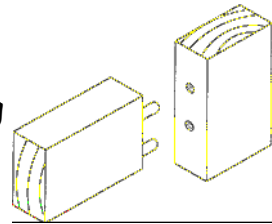
Corner Bridle

Used for heavier, stronger frames because it has a large area of contact and cannot be twisted apart unlike the halving joint. The joint is quite difficult to cut



Dowel

Used for lightweight frames. The holes are difficult to line up unless a doweling jig is used.



Questions

1. In what way should wood be glued together to get maximum strength?

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2. In what ways is a cut joint stronger than a butt joint?

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3. Name and sketch **two** joints suitable for the corner of a framework.

4. Show how a weak butt joint can be reinforced.

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