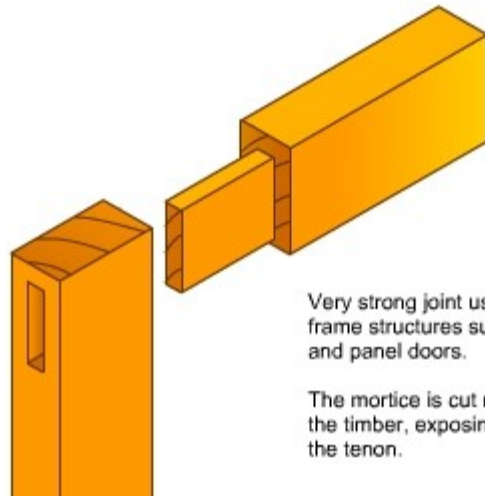


Making a Through Mortice and Tenon Joint



Very strong joint used in many frame structures such as frame and panel doors.

The mortice is cut right through the timber, exposing the end of the tenon.

Fig1.

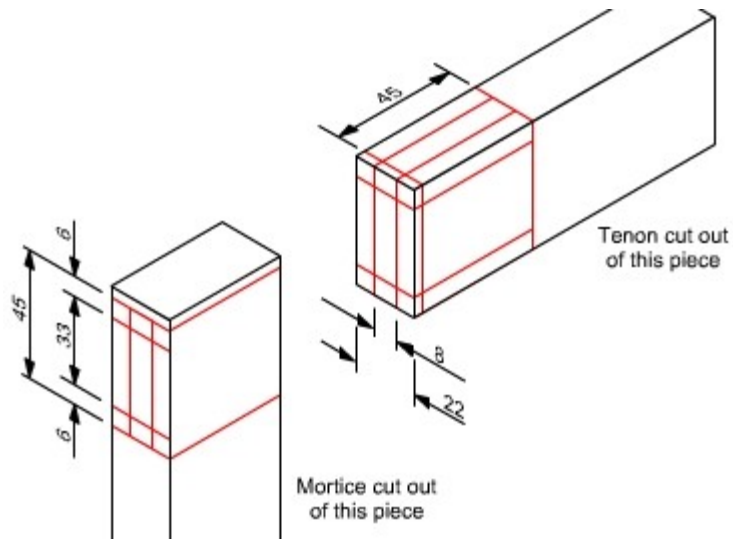


Fig 2.

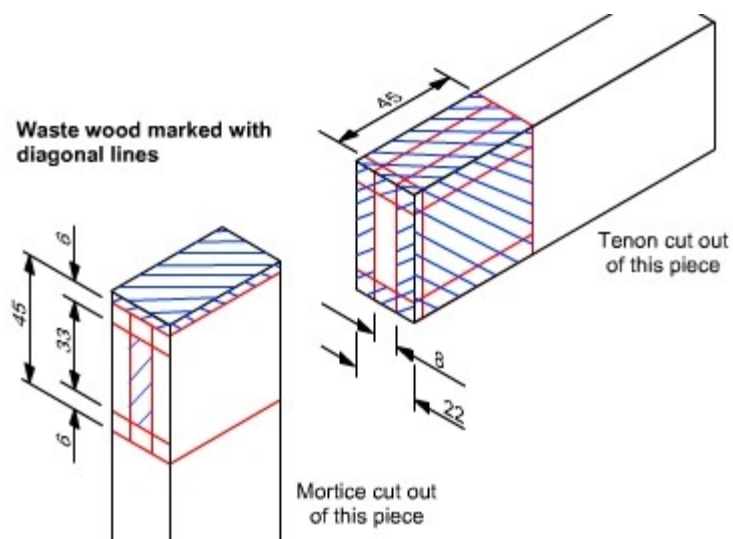


Fig 3.

Learning Objectives

Students should learn:

- that gluing to end grain makes a weak joint
- that there are standard wood joints that avoid gluing to end grain only
- that standard wood joints may be adapted for particular purposes, e.g. through mortice and tenon joint, stopped mortice and tenon joint, haunched mortice and tenon joint, bare faced tenon, etc.
- to measure accurately using a steel rule,
- to use a try square, mortice gauge, pencil and marking knife
- to use a tenon saw, mortice chisel and bevel edged chisel
- to glue timber using PVA glue
- to clamp timber using a G-cramp
- how to plane end grain.

Resources

Each pupil will need:

- 2 pieces of softwood 160 x 45 x 22
- work station on a woodwork bench ~ a woodwork vice
- pencil, marking knife, try square, mortice gauge, tenon saw, bench hook, mortice chisel, bevel edged chisel, mallet, G-cramp, small piece of scrap wood for padding under the G-cramp.

Activity

1. Students are given two pieces of timber (2 off 160 x 43 x 22).
2. Students mark around one end of both pieces of timber using a try square and marking knife.
3. Students measure 45mm from the line and mark a line around both pieces of timber using a pencil and a try square.
4. Students mark out the tenon using a marking gauge and a mortice gauge and mark the waste wood.
5. Students use a bevel edged chisel to pare along the waste side of the line (across the grain) so that a tenon saw may be located easily next to the line.
6. Students use a tenon saw to saw the tenon:
 - a. holding the timber in a vice and sawing along the grain
 - b. holding the timber on a bench hook and sawing across the grain
7. Students mark out the mortice.
8. Students clamp their timber to the bench and use a mortice chisel and a mallet to cut a through mortice.
9. Students assemble their joint.