

KONSTRUKSI KAYU SOLID



KEMAMPUAN AKHIR YANG DIHARAPKAN

- Mahasiswa mampu menerapkan sambungan kayu solid dalam pembuatan konstruksi furnitur sederhana

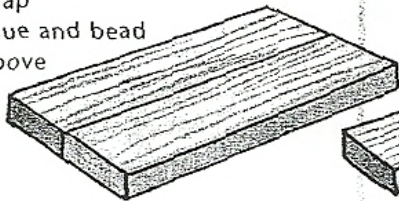


ORIENTASI DASAR SAMBUNGAN

- Penentuan arah sambungan harus dengan pertimbangan dari aspek material, struktur, dan estetika.
- **Paralel Orientation** : fleksibilitas untuk pola yang sama.
- **“I” Orientation** : panjang terlihat bertambah.
- **Cross Orientation** : konstruksi plywood knockdown dan pembagi peti telur.

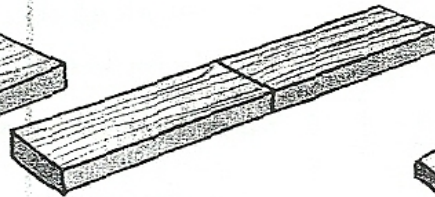
Parallel Orientation

Butted edge joint
Spline joint
Rubbed joint
Tongue and groove
Shiplap
Tongue and bead
V-groove



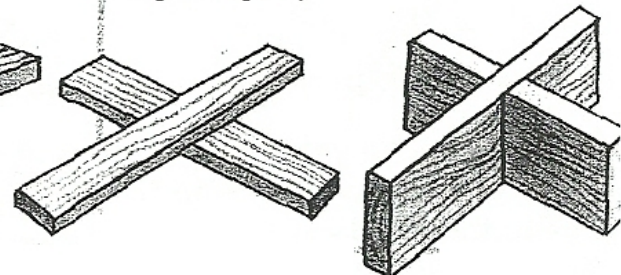
I Orientation

End-to-end scarf
Edge-to-edge scarf
Squint-butted scarf
Rabbit scarf
Transverse keyed scarf



Crossed Orientation

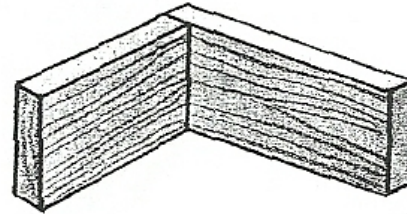
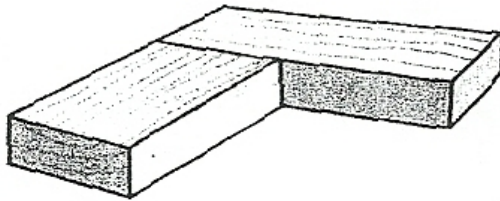
Left: Center lap
Cogged lap
Right: Edge lap



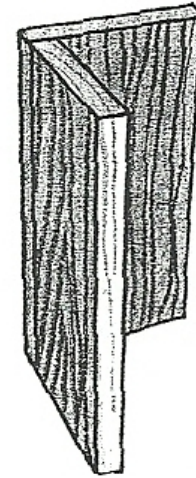
ORIENTASI DASAR SAMBUNGAN

L Orientation

End lap
Mortise and tenon
Miter joint



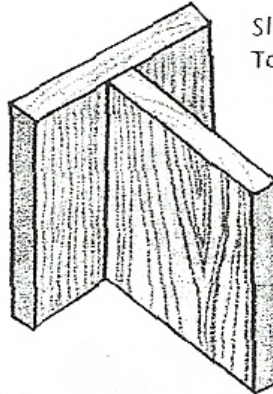
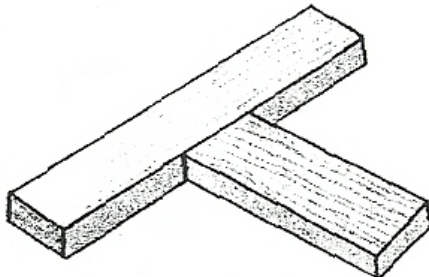
Dovetails
Lock miter
Fingerlap joint



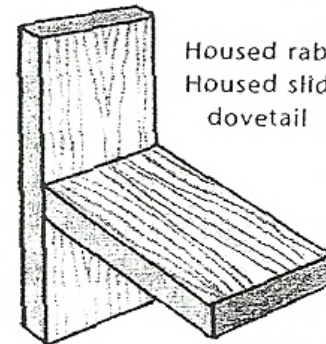
Offset tongue
and groove
Rabbet miter

T Orientation

Center lap
Dovetail lap
Mortise and tenon



Sliding dovetail
Tongue and groove



Housed rabbet
Housed sliding
dovetail

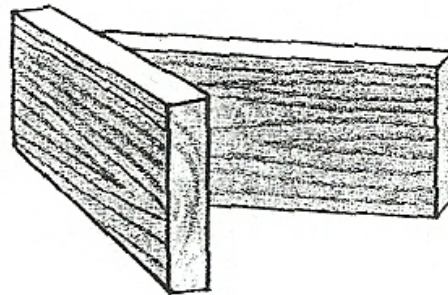
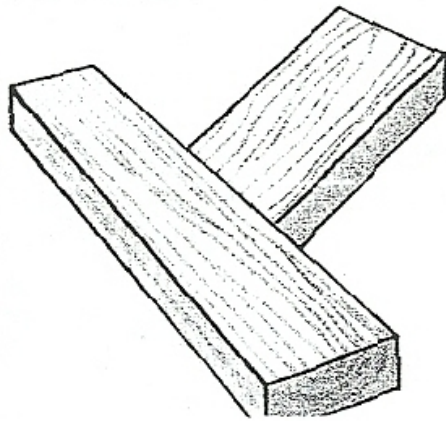


ORIENTASI DASAR SAMBUNGAN

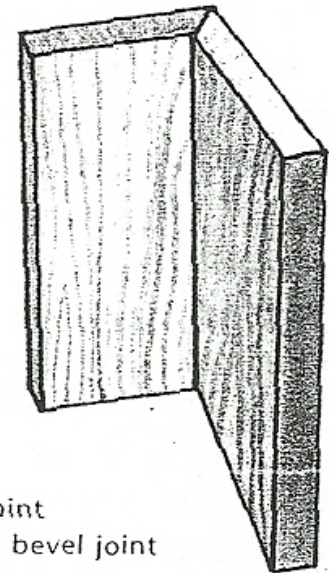
- **Angled Orientation** : dapat menyambungkan sudut lebih dari 90-180°.

Angled Orientation

Angled mortise and tenon
Angled center lap
Loose tenon



Splined bevel joint
Biscuit joint
Angled sliding dovetail

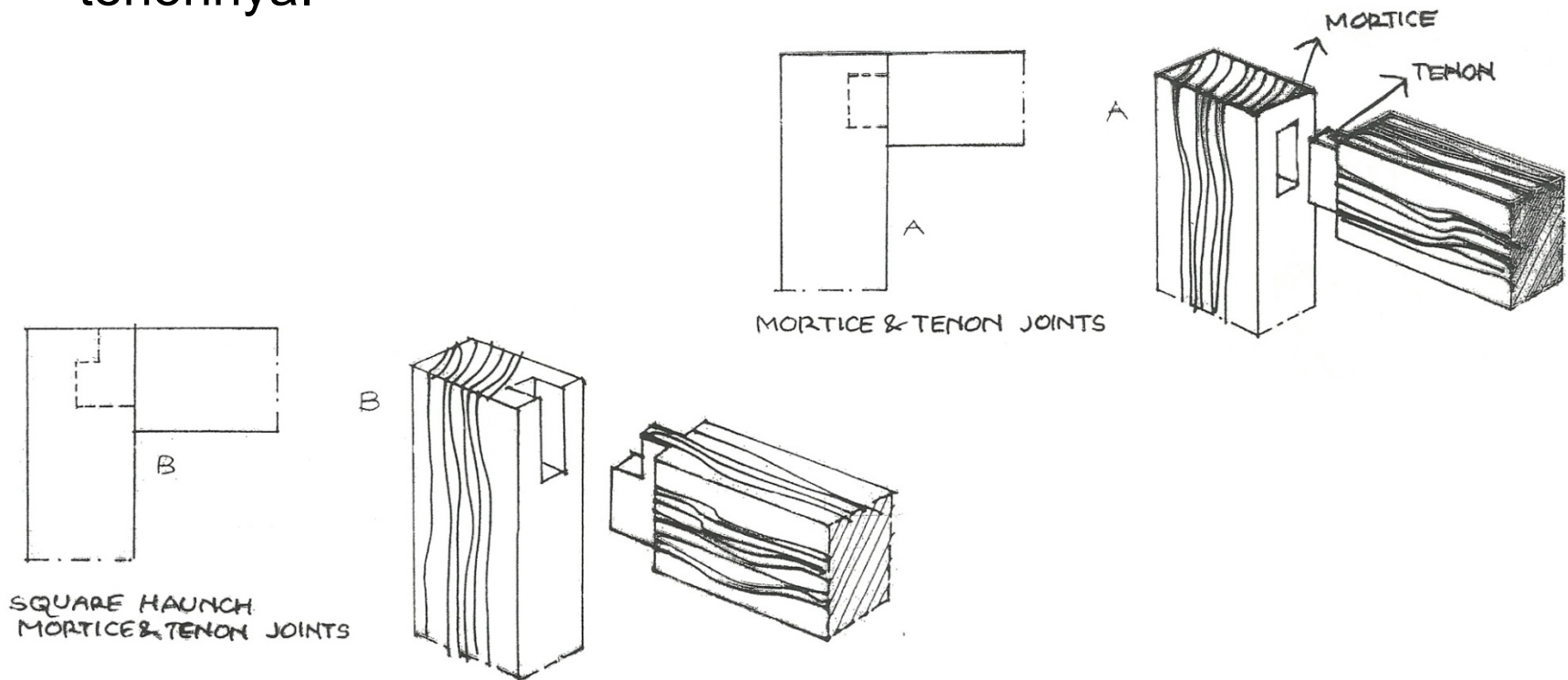


Bevel joint
Splined bevel joint



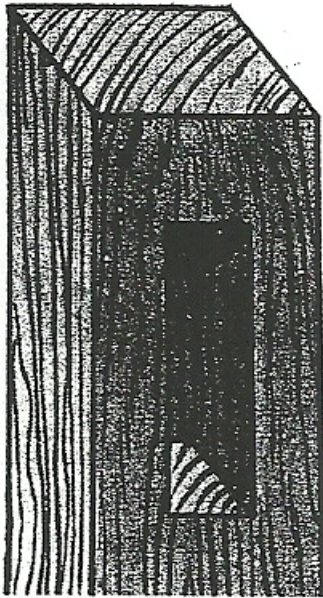
MORTISE & TENON JOINT

- Jenis sambungan yang populer, baik dari segi konstruksi maupun visual estetik, lebih dapat diandalkan.
- Untuk memperkuat ikatannya, sering ditambahkan pasak pada tenonnya.

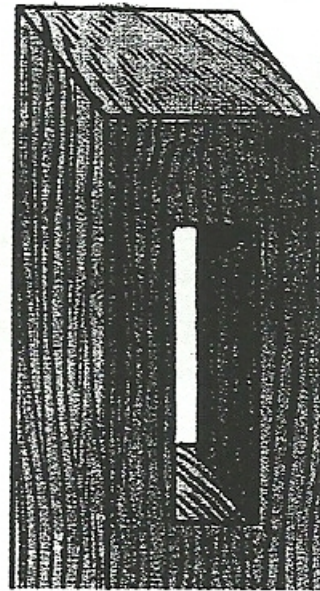


MORTISE JOINT

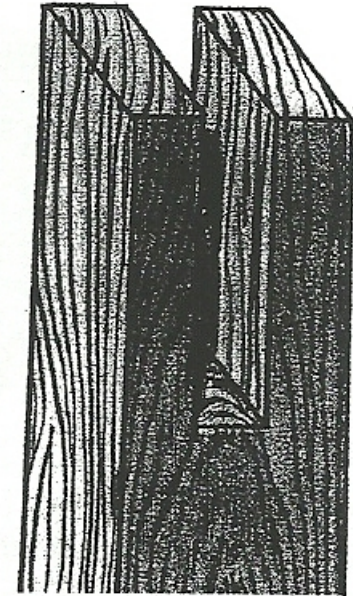
The Basic Types of Mortise



A blind mortise has a flat bottom that stops short of the opposite face, and the tenon end is therefore enclosed by the wood.



A through mortise makes a hole through the material, and once the joint is assembled, the tenon end can be seen on the other side of the hole.

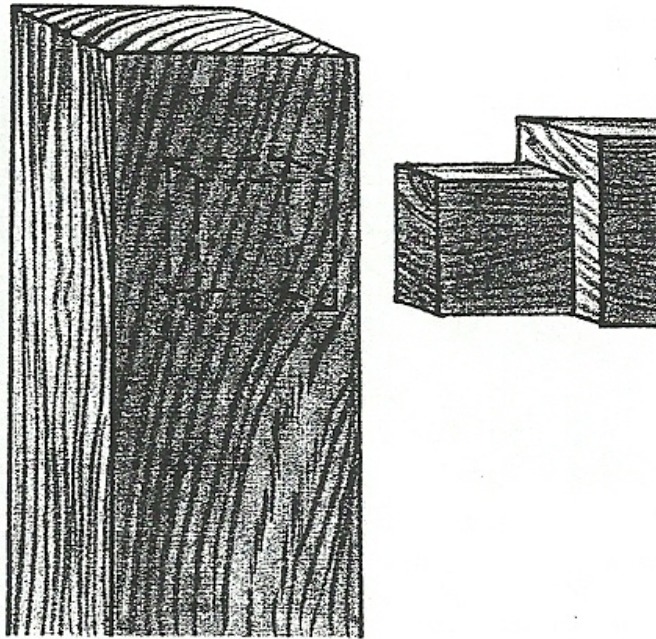


The specialized slot mortise is nothing more than a deep dado cut in the end of the part, and is used in slip or bridle joints, mortise-and-tenon relatives.

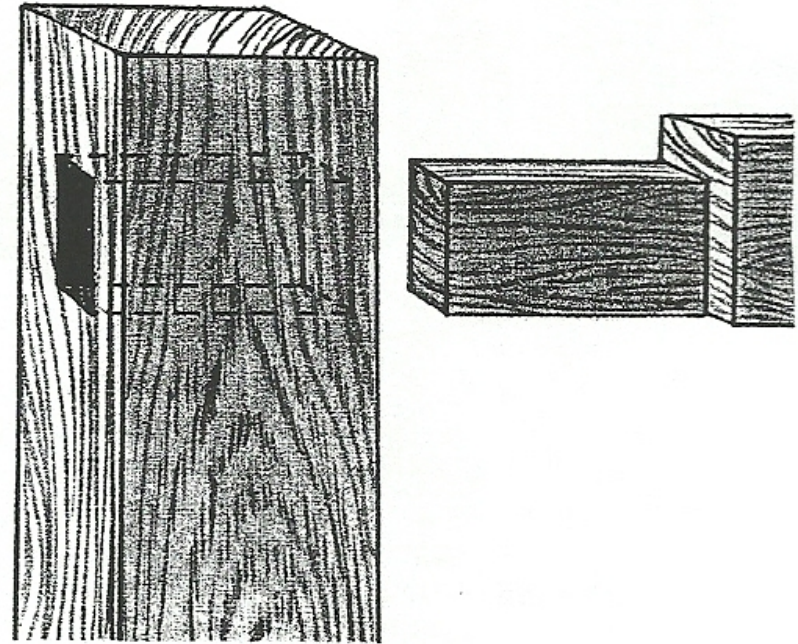


TENON JOINT

The Basic Types of Tenon



A blind or stub tenon is enclosed by a blind mortise and doesn't pass through the mortised part.



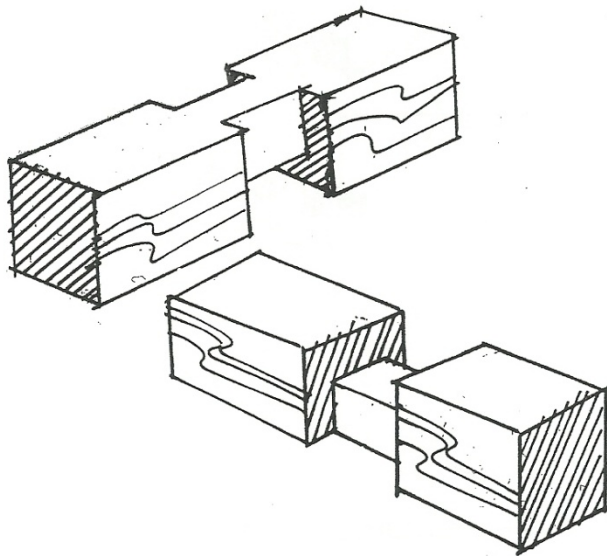
A through tenon inserted in a through mortise extends at least to the opposite face of the mortised part and sometimes beyond it.



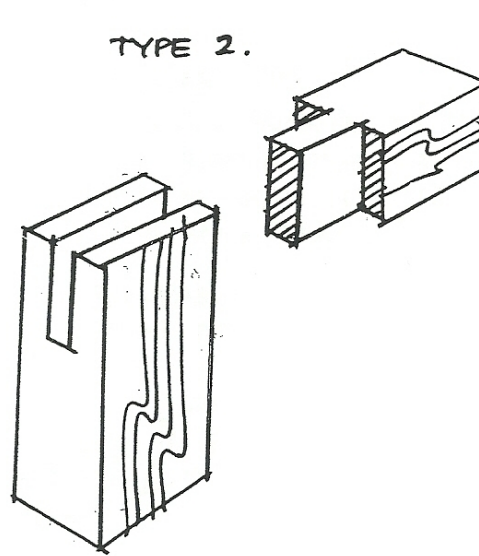
BRIDLE JOINT

- Jenis sambungan sederhana, secara konstruktif maupun visual estetik.
- Hampir serupa dengan *Halving Joint* dan *Mortise & Tenon Joint*, namun dalam posisi papan yang berbeda

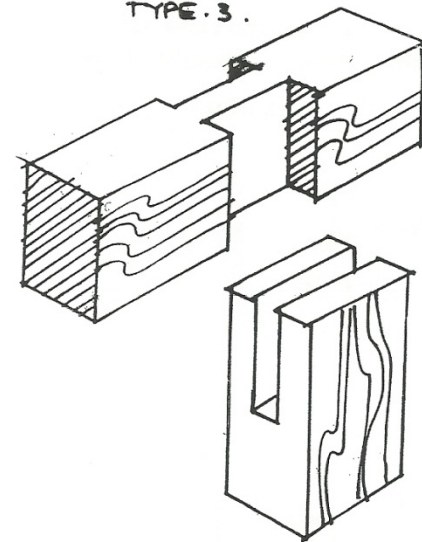
TYPE 1.



TYPE 2.

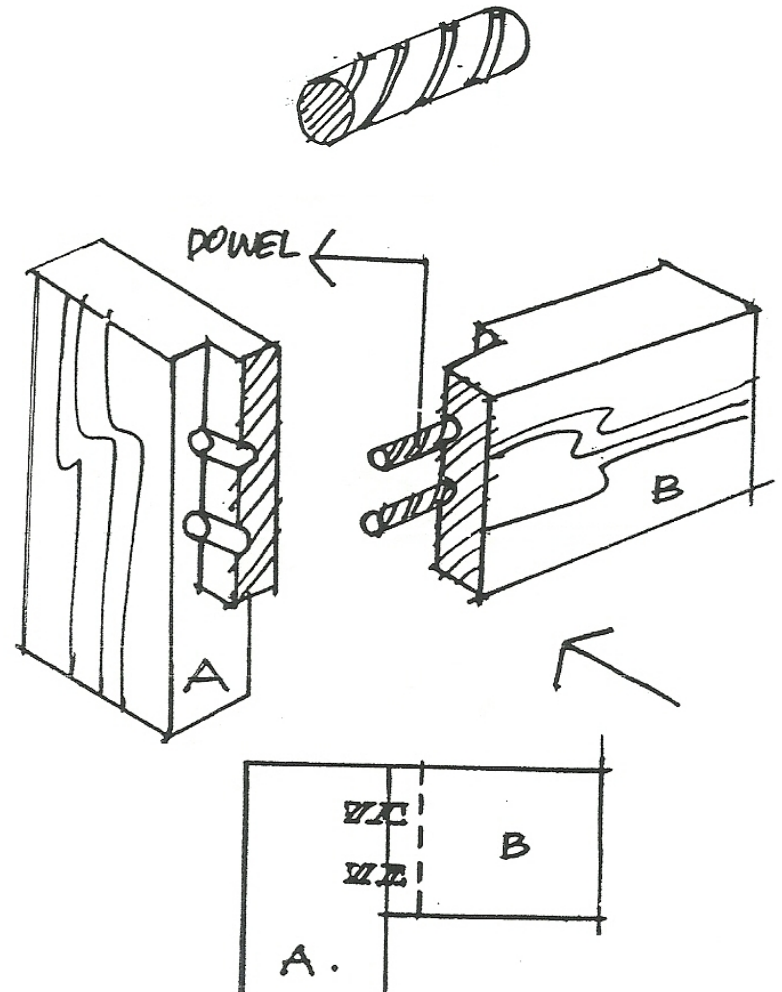


TYPE 3.



DOWEL JOINT

- Jenis sambungan yang praktis pengerjaannya, karena pada kedua komponen yang akan dihubungkan cukup dengan memberikan lubang.
- Lubang pada kedua komponen dihubungkan dengan dowel/ pen bulat.
- Banyak dipakai pada industri furniture yang menggunakan mesin (dowel dibuat dengan mesin).



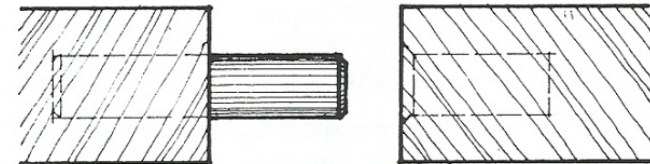
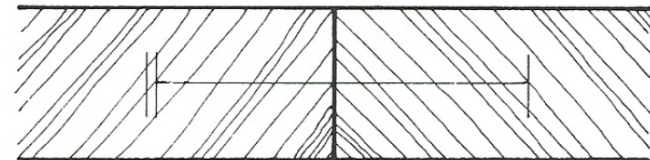
DOWEL JOINT

- 2 macam pen bulat : licin & berulir

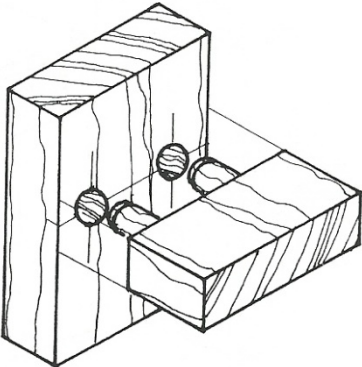
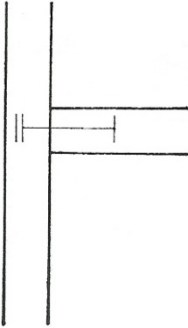
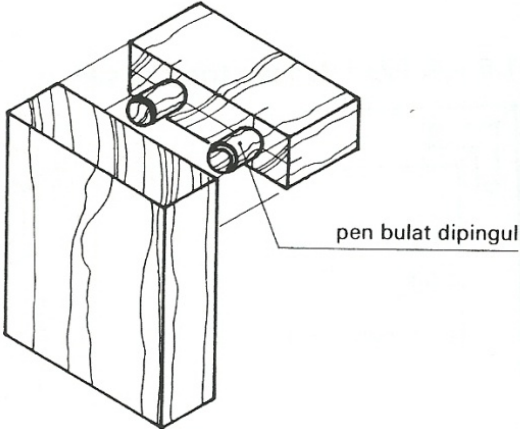
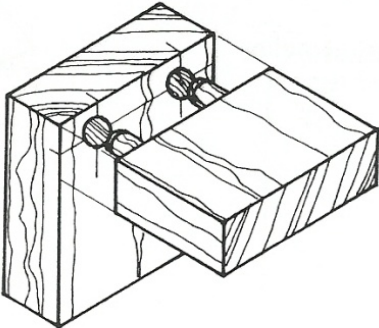
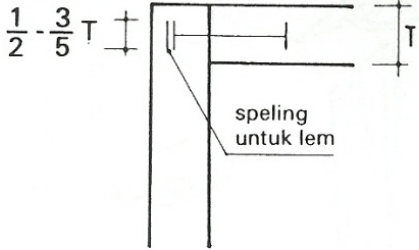
Yang lebih baik : ulir yang berpilin.

Pada celah-celah itu lem dapat berkumpul memperkuat sambungan.

- Jenis kayu yang baik : kayu mahoni, kuat dan ulet serta baik reaksinya terhadap lem.
- Diameter pen bulat $\frac{1}{3} - \frac{3}{5}$ tebal papan.
- Panjang pen yang masuk min. 25 mm.
- Ujung pen bulat harus dipinggul.
- Jarak antar pen bulat 150 – 200 mm.
- Sisa titik henti 7 mm.

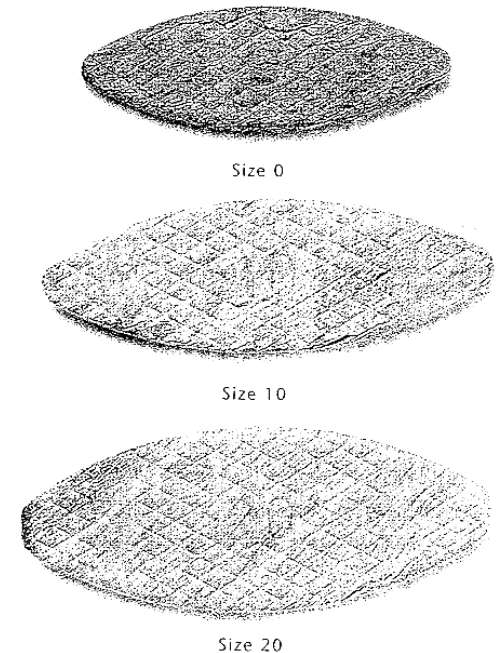
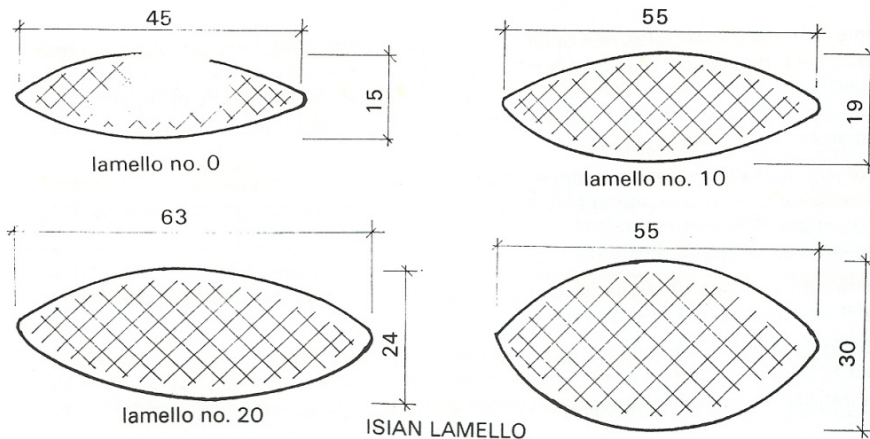
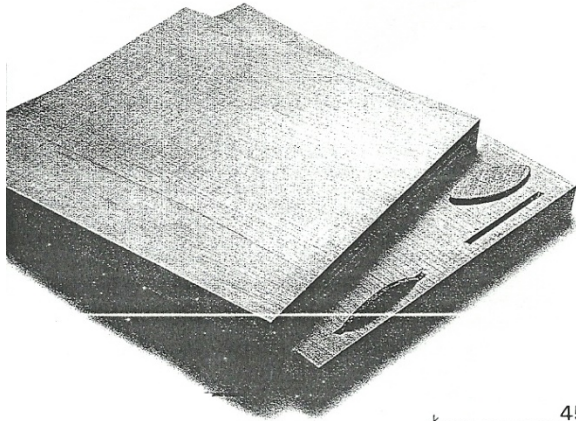


DOWEL JOINT



BISCUIT JOINT

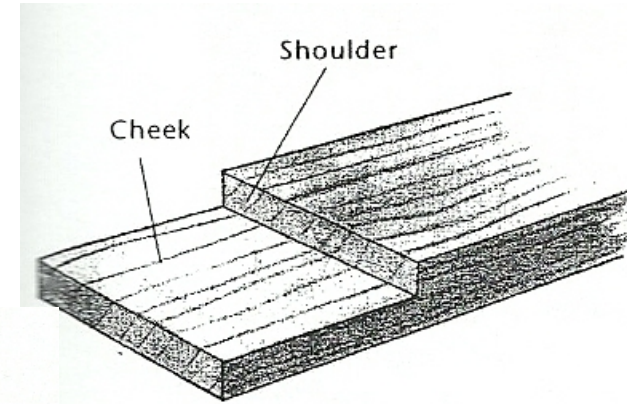
- Digunakan untuk menyambungkan *plywood* atau *particle board*, bisa juga digunakan untuk menyambung kayu solid.



All plate joiners cut kerfs for the three basic biscuit sizes; other sizes, shapes, and types are for specific joiner brands or router-cut slots.



HALVING / LAP JOINT

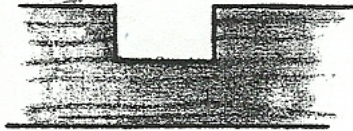


Milled Elements

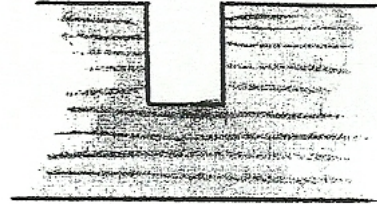
Rabbet



Dado

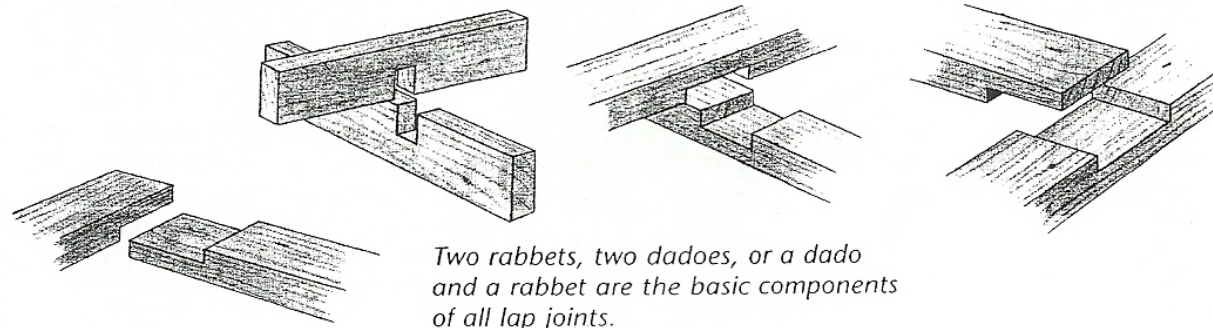


Notch



The three basic cuts used to make halvings or lap joints.

Combining the Elements of Lap Joints

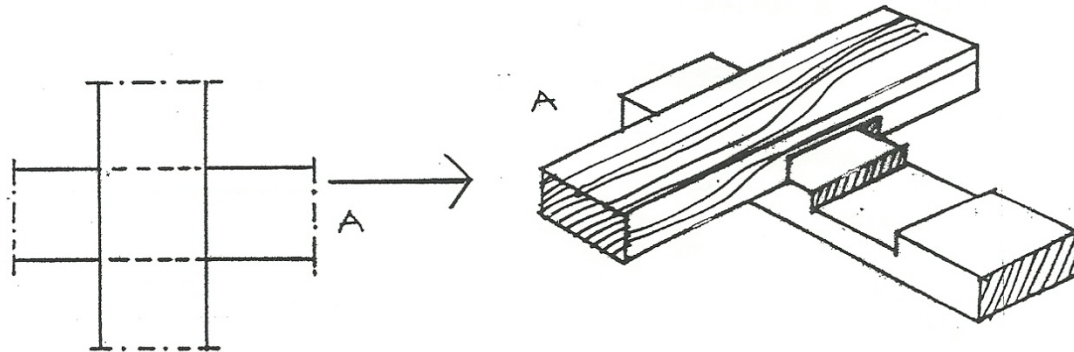


Two rabbets, two dados, or a dado and a rabbet are the basic components of all lap joints.



HALVING / LAP JOINT

- Sambungan untuk menghubungkan 2 komponen kayu dengan mengerat sebagian ketebalan dari masing-masing komponen.
- Banyak dipakai sebagai kerangka penunjang sebuah dinding lemari yang akan dilapis *plywood/veneer*.



HALVING / LAP JOINT

