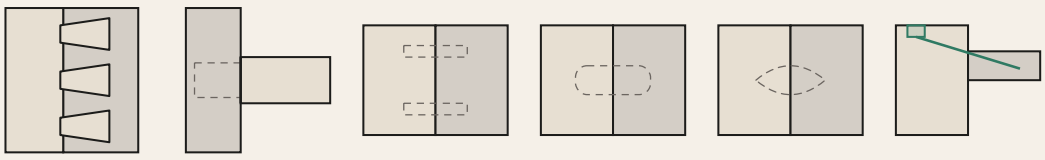
Joint types in *furniture* and joinery

Six joints drawn side by side, what end grain does to a glue line, and a brief for each part of a piece. No strength figure for a decorative joint was found; the rest is for the workshop to propose.

AT A GLANCE

Joint	Typical use	What the sources say	Watch for	Specify
Dovetail	Drawer and box corners	Interlocks against the pull. No strength figure read.	Visible joint: show or hide it on the drawing	Through, lapped (half-blind) or machine-cut; glue
Mortise and tenon	Frames: legs and rails, door stiles and rails	Named by the Wood Handbook as a strong end-to-edge connection	Moisture: the stile swells across the rail	Haunched or slot; tenon size; glued, pegged or both
Dowel	Carcass corners, rail to leg, edge joints	Named by the Wood Handbook as a strong end-to-edge connection	Alignment of holes; dowel too short or too few	Diameter, length, number, spacing; glue
Loose tenon	Frames and heavier carcasses	A separate tenon in two mortises. No figure read.	Fit of both mortises	Tenon and mortise size; species of tenon; glue
Biscuit	Aligning panel edges and carcass corners	Alignment, not strength: no figure read	Swelling of the biscuit under water-based glue	Where used, and that it is for alignment only
Screw	Knock-down parts, fixing to a frame, hidden brackets	End-grain hold about 75% of side-grain hold (Wood Handbook)	Splitting; screwing into end grain; loosening in service	Type, length, lead hole; never into end grain for load

Strength statements are the Wood Handbook's general ones (US Forest Products Laboratory, 2021). Where the cell says 'no figure read', none was found.



Dovetail
drawer and box corners

Mortise
and tenon frames, legs

Dowel
carcass and panel joints

Loose tenon
frames, rails, heavier carcass

Biscuit
alignment of panel edges

Screw
knock-down and fixing to a frame

Dashed outlines are hidden inside the joint. Schematic: proportions are not a design.

Six common joints drawn schematically. Dashed outlines are hidden inside the joint. Original drawing by Make Bespoke Studio.

SPECIFICATION WORDING

FRAME JOINTS

Joints between [legs and rails / door stiles and rails] to be [haunched mortise and tenon / loose tenon], tenon [x] mm thick x [x] mm wide x [x] mm long, glued with [adhesive and grade stated by the workshop] to joint reference [drawing ref]. No load-bearing butt joints. Timber at [8] per cent moisture content (+/- [ ]) at assembly.

DRAWER BOXES

Drawer box corners to be [lapped / through] dovetails, [hand-cut / machine-cut], at [front / back] corners, as drawing [ref]. The joint is [visible / hidden] when the drawer is open. Glued with [adhesive]; the drawer bottom let into a groove, not fixed to the underside.

CARCASS JOINTS

Carcass joints to be [dowelled / loose tenon / housed], dowel [8] mm diameter x [30] mm long at [x] mm centres, glued. Biscuits, if used, are for alignment only and are not to be counted as the structural joint. Joint set-out to be shown on the shop drawings for approval before production.

KNOCK-DOWN PARTS

Parts marked [KD] on drawing [ref] to be assembled with [screws / steel fittings] and not glued; fixings [type and length], lead holes [as the supplier states]. Screws are not to be driven into end grain for load unless the workshop confirms the detail.

TERMS USED

Haunch
A short extension of a tenon that fills the groove cut at the end of a stile, so the joint does not twist; seen on door stiles and rails.

End grain
The surface exposed when timber is cut across its fibres. The Wood Handbook describes it as many times more porous than the sides of a piece, so it soaks up adhesive and bonds poorly.

Scarf joint
A long sloping cut across two pieces so they join end to end along mostly long-grain faces. At 1 in 12 or flatter it gives the highest strength (Wood Handbook).

Racking
The twisting of a rectangular frame out of square under a sideways load.

Knock-down (KD)
A part made to be assembled on site and taken apart again, joined with fittings rather than glue.

STANDARDS AND SOURCES

- USDA Forest Products Laboratory, Wood Handbook: Wood as an Engineering Material, FPL-GTR-282 (2021): ch. 10 pp. 10-16 and 10-17 (end-grain and end-to-edge joints); ch. 8 p. 8-11 (screws). US publication; general principles only.
- Architectural Woodwork Standards, 1st edition (2009), AWI, AWMAC and Woodwork Institute: Sections 6, 7 and 9: joint illustrations for frames, handrails and doors. US document, free section PDFs; grade rules excluded. Not read for strength.
- Library sheets: drawer construction; furniture tolerances; timber movement: neighbouring detail.

Full guide: https://makebespoke.com/trade/technical/joint-types-in-furniture-and-joinery. Make Bespoke Studio coordinates manufacture through its partner workshops. Figures are guidance only and your specification governs; some may be superseded, so contact the studio to verify.