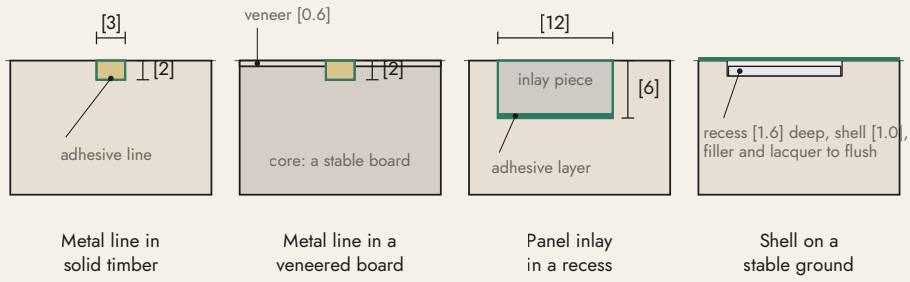
Inlays in *joinery*: wood, metal, shell and stone

Four inlays in section, how far oak and brass move, which way a line may run, and wording for groove, bond and flushness. No published rule for groove depth or flushness was found.

AT A GLANCE

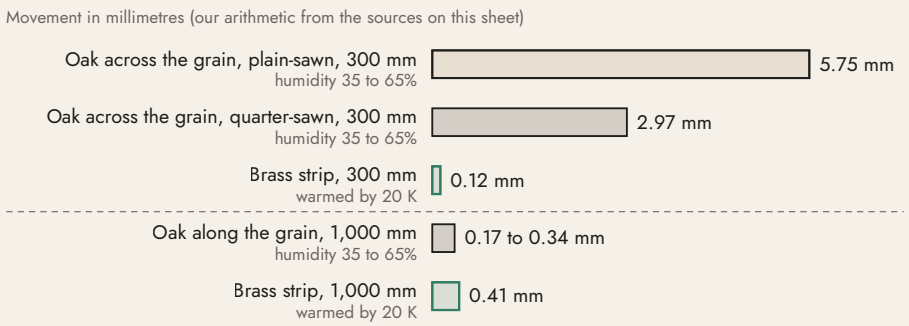
Inlay	Typical size	Ground	The risk	Care
Metal line (stringing)	Commonly 1 to 3 mm wide, as our pages say	Solid timber, or a stable veneered board	Across the grain of solid timber: timber moves, metal does not	Seal or patinate as specified; keep polish off the timber
Timber line or banding	A strip of contrasting timber	The same or similar timber	Little extra movement if the grain runs the same way; much more if it crosses	As the surrounding finish
Panel inlay	Shaped pieces: fans, stars, lettering	A flat, stable core	A rigid piece can lift, or crack the ground	As the surrounding finish
Shell, mother of pearl	Thin and brittle; hand or laser cut	Stable MDF, plywood or solid timber	Shows any movement or unevenness beneath it	Soft dry cloth; no solvents or abrasives
Stone	Cut pieces; thickness set by the partner	A rigid, flat ground	Moves differently from timber; no coefficient read	As the stone page

Sizes and care notes are what our own inlay and shell pages say. Stone has no figure: none was read.



All four at the same scale, 7.6 px per millimetre, ground broken away at the sides.
Sizes in square brackets are examples, not rules: the workshop confirms them.

Four inlays in section: a metal line in solid timber, a metal line in a veneered board, a panel inlay in a recess and a shell piece. Schematic; sizes in square brackets are examples. Original drawing by Make Bespoke Studio.



How far oak and brass move, from the Wood Handbook coefficients and the metal coefficients on the thermal expansion sheet. Our arithmetic. Original chart by Make Bespoke Studio.

SPECIFICATION WORDING

METAL LINE INLAY

[Brass] line inlay [3] mm wide x [1.5] mm thick, let flush into a groove [3] mm wide x [1.5] mm deep cut in the [core / solid timber] of [element], running [along the grain]. Metal surface prepared and bonded with [adhesive and method stated by the workshop]. Finished flush with the surrounding surface: no step greater than [0.1] mm and no gap, void or glue line visible under raking light at [500] mm. Metal and timber finished together with [lacquer / patina] to approved sample [ref]. A line across the grain of solid timber wider than [150] mm is not permitted unless broken into lengths of not more than [x] mm with movement joints as drawing [ref].

SHELL OR MOTHER OF PEARL INLAY

[Natural / reconstituted] [mother of pearl / abalone] inlay [1.0] mm thick let into a recess [1.6] mm deep in a [stable MDF / plywood] ground; recess floor flat to [ ] mm over [ ] mm; bonded with [adhesive]; surface filled and built up with [clear lacquer] to flush; no lifting or cracking at the edges. Approved sample [ref] governs.

GROUND AND MOVEMENT

Ground: [balanced veneered board / solid timber, species, cut], at [8] per cent moisture content (+/- [ ]) at fixing, conditioned to the expected room humidity of [ ] per cent before inlaying. Inlay layout to be shown on shop drawings with grain direction, line lengths and joints. [One] mock-up of [one] junction and [one] corner to be approved, and checked under raking light, before production.

TERMS USED

Inlay
A material let flush into a recess or groove cut in a ground of another material, so the two read as one plane. Marquetry, by contrast, is assembled as veneer and laid onto the surface.

Balanced construction
A construction such that changes in moisture content will not cause warping, for example matching veneers on both faces (Wood Handbook glossary).

STANDARDS AND SOURCES

- USDA Forest Products Laboratory, Wood Handbook: Wood as an Engineering Material, FPL-GTR-282 (2021): Tables 4-2 and 13-5, p. 4-9, p. 4-17, Eq. 13-3, p. 10-5, glossary. US species.
- Library sheet: thermal expansion of metals (TL-MET-23): the metal coefficients.
- Our metal inlay, shell and marquetry pages: strip sizes, bonding order and care. No standard was found for groove depth, movement joints or flushness.

Full guide: https://makebespoke.com/trade/technical/inlays-in-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.