Wardrobe hanging *rails*: metal, section, span and load

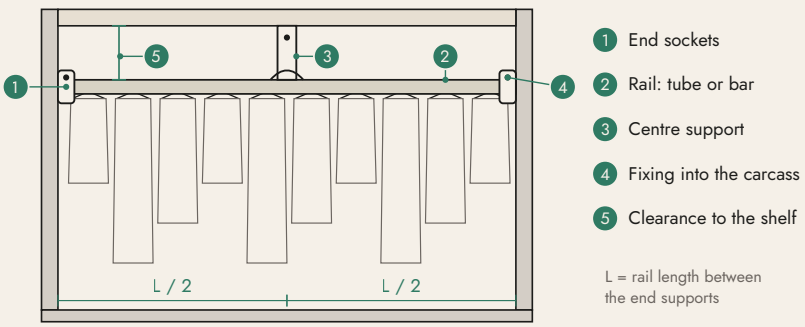
Spans and loads for wardrobe hanging rails from checked arithmetic, as starting points for a partner to confirm.

Compliance guidance. Spans and loads here are our own arithmetic from published material values and a stated beam formula, not from a standard or a load test. Each is a starting point for a partner workshop to confirm by calculation or test. Test loads quoted for storage furniture are test levels, not design loads. Not engineering advice: for heavy loads or public use, ask a structural engineer.

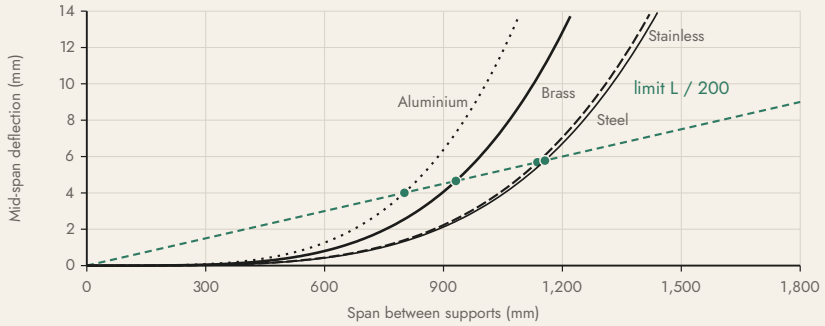
AT A GLANCE

Rail	Finish options	Watch out	Round 25 mm at 40 kg per metre: longest span between two supports
Solid brass tube or bar	Polished, satin or brushed; lacquered, or left unsealed to age.	Lacquer wears where hands land. The softest temper bends at long spans. Solid bar is heavy.	930 mm tube; 1,230 mm solid 25 bar
Stainless steel tube (304)	Brushed (2J) or polished (2P); PVD colour over the stainless.	PVD damage cannot be repaired on site. A tube's properties differ from the flat values used here.	1,130 mm
Plated steel tube	Bright or satin chrome or nickel; electro-brass plate.	Plating is thin and can wear through where hangers rub.	1,150 mm
Anodised aluminium (6060 T6)	Anodised, in the partner's range of colours.	Lightest and least stiff. Sheet and extrusion colours need controlling.	800 mm
Solid oak, 32 mm round	Oiled or lacquered: see the timber finishes sheet.	Heavy, and deflects further over time, so we apply a long-term factor.	740 mm
Oval tube 30 x 15	As the metal it is made in.	Stiff with the long side upright. Turned long side across it is about 3 times less stiff.	brass 950 mm; steel 1,180 mm

Span to a mid-span deflection of span/200, rail weight included: our arithmetic. Section sizes are illustrations.



One wardrobe bay in front elevation: end sockets, rail, centre support, fixing into the carcass and the clearance to the shelf. Schematic, not to scale. Original drawing by Make Bespoke Studio.



Mid-span deflection against span for 25 x 1.5 mm round tubes at 40 kg per metre, supported at the two ends only. Each dot is the longest span within span/200. Our arithmetic from the material values below. Original chart by Make Bespoke Studio.

SPECIFICATION WORDING

HANGING RAIL

Hanging rail: [25 mm round tube, 1.5 mm wall, solid brass CW508L / 304 stainless steel / other], finish [code and sample reference], supported at both ends in sockets of matching metal and finish and by centre supports of matching metal and finish at not more than [900] mm centres. Design load [20 / 40] kg per metre of rail, rail weight included; maximum deflection at mid-span of any span [span/200]. The workshop to confirm the section, the span and the support spacing by calculation or load test and supply the calculation or report before production.

SUPPORTS AND FIXINGS

Rail sockets and centre supports fixed to [18 mm board / solid timber / wall plate] with [fixings] to resist not less than [ ] N each, the centre support being designed for 1.25 x the design line load x the span on one side. The part the centre support hangs from not to deflect more than [ ] mm under that load.

FINISH AND APPROVAL

Rail, sockets, centre supports, handles and hinges to be one finish: [name, code], approved on a signed sample [reference, date] showing the rail, one socket and one bracket. The sample governs.

TERMS USED

Deflection

How far a beam sags under load, measured at the point of greatest movement. For a hanging rail it is usually at mid-span.

Second moment of area (I)

A property of a section's shape that sets how stiff it is in bending, in mm to the fourth. A deeper section has a much larger I.

Proof strength (Rpo.2)

The stress at which a metal has taken a permanent stretch of 0.2 per cent. It is the usual strength figure for metals with no clear yield point.

STANDARDS AND SOURCES

- BS EN 16122, ISO 7170 and BS EN 14749: clothes-rail clauses 6.3.1, 6.3.2 and shelf limit 6.1.4 as listed in a test house's table (March 2024); EN 16122:2012 shown Current by third-party shops. Texts not read: confirm the current edition.
- Euro Inox, Stainless Steel: Tables of Technical Properties (2nd ed. 2007): read 5 Nov 2026.
- steelconstruction.info: Steel material properties: read 5 Nov 2026.
- USDA Forest Products Laboratory, Wood Handbook FPL-GTR-282 (2021): Table 5-3a, metric.
- A CW508L tubes data sheet (16 Jan 2025) and an EN AW-6060 data sheet (Rev. 4, March 2023): named in the notes file.

Full guide: https://makebespoke.com/trade/technical/wardrobe-hanging-rails. 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.