Anthropometrics for *specifiers*: the body sizes behind furniture

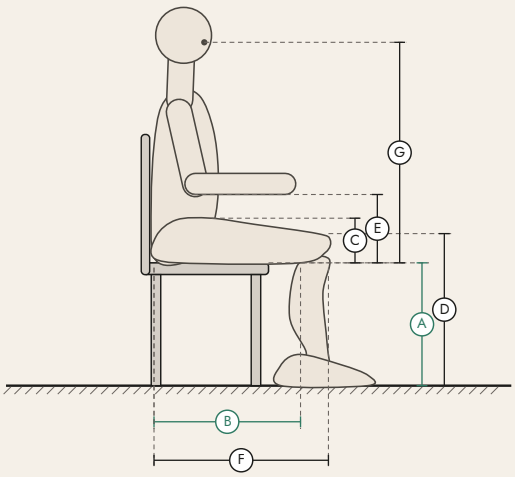
The body measurements behind seat height, depth, width and table clearance, which end of the range governs each, and a worked example against our seat and table sheets.

AT A GLANCE

Body measurement	What it sets	Which end governs	5th percentile woman to 95th percentile man, mm
Popliteal height (A)	Seat height	Small end for a fixed seat; adjustable seats span both ends	370 to 490 (A); 355 to 490 (B)
Buttock-popliteal length (B)	Seat depth	Small end: a deeper seat presses behind the knee	440 to 570 (A); 435 to 550 (B)
Thigh thickness (C)	Seat to underside of apron or rail	Large end	120 to 180 (A); 125 to 185 (B)
Knee height (D)	Floor to underside of a top or overhang	Large end	460 to 580 (A); 455 to 595 (B)
Sitting elbow height (E)	Top of a table or desk above the seat	The range; the task decides	190 to 290 (A); 185 to 295 (B)
Buttock-knee length (F)	Legroom depth, chair pull-out, row spacing	Large end	520 to 670 (A); 520 to 645 (B)
Sitting eye height (G)	Screen, TV and sight-line height	The range	700 to 860 (A); 685 to 845 (B)
Hip breadth, sitting	Seat width and the gap between arms	Large end (women)	460 (A); 435 (B), women 95th
Standing elbow height	Counter, bar and worktop height	The range	950 to 1,180 (A); 930 to 1,180 (B)
Stature	Headroom, mirrors, rail and shelf reach	Large end for clearance; small end for reach	1,510 to 1,860 (A); 1,505 to 1,855 (B)

Millimetres. A = a British compilation on an engineering reference site (based on Pheasant's Bodyspace); B = a university teaching site. Both give British adults aged about 19 to 65, unshod. Neither names its measurement year. Letters match the drawing.

THE SEVEN MEASUREMENTS



Seated adult, side view, to scale. Letters match the first column of the table: A popliteal height, B buttock-popliteal length, C thigh thickness, D knee height, E sitting elbow height, F buttock-knee length, G sitting eye height. Schematic mannequin.

WHICH END GOVERNS, AND THE SUMS

- Clearances and widths: the large end (95th percentile). Thigh room (95th thigh 180 to 185 mm), knee height, seat width.
- Reach and support: the small end (5th percentile). Seat depth (5th woman's buttock-popliteal 435 to 440 mm); a fixed seat height (5th woman's popliteal height 355 to 370 mm plus a 45 mm shoe).
- Adjustable: both ends. About 400 to 515 mm for seats from the two tables, against 380 to 535 mm in HSE HSG57 Figure 1(a).
- Worked example: seat 450, top 745, 25 mm top on a 60 mm apron: underside 210 above the seat, 25 clear of a 185 mm thigh; underside 660 above the floor, 40 clear of a 95th percentile knee with a shoe.

SPECIFICATION WORDING

DESIGN BASIS

Dimensional design basis: adult users from the [5th percentile woman] to the [95th percentile man], taken from [dataset, edition and year], population [British adults, 19 to 65]. Footwear allowance [25 mm men, 45 mm women] added to dimensions measured from the floor. Where a dimension is fixed, it is set to the [small / large] end stated in the schedule; where it is adjustable, the range is [ ] to [ ] mm. The designer to state any user group the basis does not cover [children / wheelchair users / users over 110 kg].

FIXED SEAT HEIGHT

Seat [ref]: loaded seat height [450] mm measured from finished floor level to the top of the upholstery at the centre of the seat, one third of the seat depth back from the front edge, with the seat loaded as sat on. The design accepts that users whose popliteal height plus shoe is below [450] mm will not rest their feet flat; a footrest or [adjustable alternative] to be provided where [the brief requires it]. Seat depth [430] mm, not more than [435] mm.

TABLE CLEARANCE

Table [ref]: top [745] mm above finished floor, underside of apron or rail not lower than [seat height + 200] mm and not lower than [660] mm above finished floor, to clear a 95th percentile thigh and knee with shoes. Top thickness [25] mm, apron depth [60] mm. Dimensions to be confirmed on a mock-up seated by users at both ends of the range [attach record] before production.

TERMS USED

Popliteal height

The distance from the floor to the underside of the thigh just behind the knee when seated. It limits how tall a seat can be before pressing into the thighs.

Buttock-popliteal length

The horizontal distance from the back of the pelvis to the back of the knee when seated. A seat deeper than this presses behind the knees, so it sets the maximum comfortable seat depth for shorter users.

Percentile

The share of a population at or below a value. The 5th percentile woman's popliteal height is the value that 95 per cent of women exceed; the 95th percentile man's is the value only 5 per cent of men exceed.

STANDARDS AND SOURCES

- HSE, Seating at work (HSG57), third edition 1997, reprinted with amendments 2002 and 2011: paragraphs 23 and 36 to 38; Figures 1(a), 3 and 4. Read November 2026.
- NHS Digital, Health Survey for England 2022, part 2: adult overweight and obesity (published 24 Sep 2024): mean measured height. Read November 2026.
- BS EN ISO 7250-1:2017, basic human body measurements for technological design: BSI Knowledge: current, published 31 Oct 2017, supersedes the 2010 edition. Text not read.
- Adultdata (Peebles and Norris, DTI, 1998) and Bodyspace (Pheasant and Haslegrave): named as the primary UK references; not read. The two secondary tables used here are described on the page.

Full guide: https://makebespoke.com/trade/technical/anthropometrics-for-specifiers. 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.