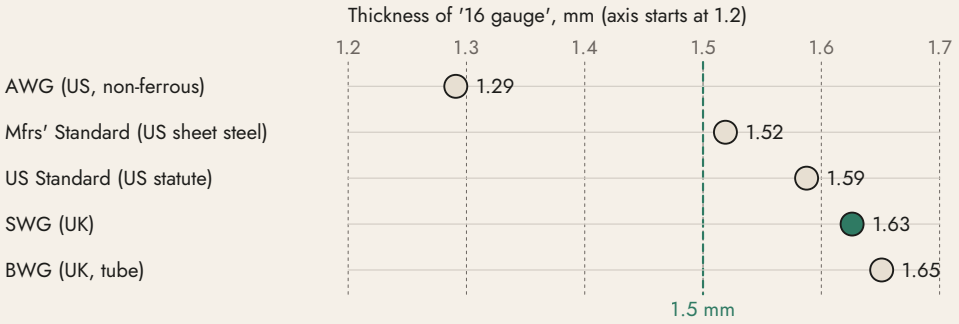
Sheet metal thickness and *gauge conversion*

Specify sheet in millimetres. The same gauge number is a different thickness in each gauge table, and the 1.5 mm size has no SWG equivalent.

AT A GLANCE

Gauge	SWG, mm (inches)	BWG, mm (inches)	US Standard, mm (inches)	AWG, mm (inches)
10	3.25 (0.128 in)	3.40 (0.134 in)	3.57 (0.1406 in)	2.59 (0.1019 in)
12	2.64 (0.104 in)	2.77 (0.109 in)	2.78 (0.1094 in)	2.05 (0.0808 in)
14	2.03 (0.080 in)	2.11 (0.083 in)	1.98 (0.0781 in)	1.63 (0.0641 in)
16	1.63 (0.064 in)	1.65 (0.065 in)	1.59 (0.0625 in)	1.29 (0.0508 in)
18	1.22 (0.048 in)	1.24 (0.049 in)	1.27 (0.0500 in)	1.02 (0.0403 in)
20	0.91 (0.036 in)	0.89 (0.035 in)	0.95 (0.0375 in)	0.81 (0.0320 in)
22	0.71 (0.028 in)	0.71 (0.028 in)	0.79 (0.0312 in)	0.64 (0.0253 in)
24	0.56 (0.022 in)	0.56 (0.022 in)	0.64 (0.0250 in)	0.51 (0.0201 in)

A higher gauge number is thinner. mm = inches x 25.4, to 0.01 mm. SWG and BWG: published tables (secondary). US Standard: the US statute of 1893 (primary). AWG: its defining formula. The tables disagree, so never write a gauge without millimetres.



The thickest is 28 per cent thicker than the thinnest. One number, five thicknesses.

16 gauge in five tables, in mm. The axis starts at 1.2 mm so the dots can be told apart. Original chart by Make Bespoke Studio; the Manufacturers' Standard value is secondary.

MILLIMETRES TO THE NEAREST SWG

Size in mm	Nearest SWG	Difference	Verdict
0.5 mm	25 swg (0.51 mm)	+0.01 mm (+1.6%)	Close
1 mm	19 swg (1.02 mm)	+0.02 mm (+1.6%)	Close
1.5 mm	17 swg (1.42 mm)	-0.08 mm (-5.2%)	No match
2 mm	14 swg (2.03 mm)	+0.03 mm (+1.6%)	Close
2.5 mm	12 swg (2.64 mm)	+0.14 mm (+5.7%)	No match

WEIGHT IN KG/M² = THICKNESS IN MM X DENSITY IN G/CM³ (NOMINAL)

Metal	Density, g/cm³	kg/m² at 1 mm	1.5 mm	2 mm	3 mm
Carbon steel	7.85	7.85	11.77	15.70	23.55
Stainless 1.4301 (304)	7.90	7.90	11.85	15.80	23.70
Stainless 1.4401 (316)	8.00	8.00	12.00	16.00	24.00
Brass CW508L	8.44	8.44	12.66	16.88	25.32
Aluminium	2.70	2.70	4.05	5.40	8.10

SPECIFICATION WORDING

SHEET THICKNESS

Sheet thickness [1.5] mm nominal, stated in millimetres on all drawings and schedules, supplied to the thickness tolerance of [product standard, edition to be confirmed]. Finished thickness after grinding and polishing not less than [1.4] mm. Gauge numbers are not to be used. Where a supplier quotes a gauge, the gauge table and the millimetre value are to be stated in writing.

FLATNESS AND STIFFENING

Panels [__ x __ mm] are to be flat within [ ] mm over [ ] mm, judged [as installed] under [raking light] against approved mock-up [ref. __]. Stiffening by [folded return edges / bonded core] as drawn. The partner is to state the largest panel size proven at the stated thickness.

WEIGHT

The weight per square metre of [panel / sheet] and the total weight of each assembly are to be stated on the shop drawing for the fixing design. Weights are to come from the actual metal and finished thickness, not a gauge table.

TERMS USED

Gauge (SWG / BWG)

An old numbering system for sheet and wire thickness where a higher number is thinner. Different systems and metals give different thicknesses for the same number, so always state mm.

Oil canning

Visible waviness or rippling in flat metal sheet, caused by stresses, thin material, restraint or temperature movement. Thicker sheet, backing and fixing design reduce it.

US Standard Gauge

The gauge set by a US statute of 1893 for sheet and plate iron and steel. Gauge 16 is 1/16 inch, or 1.5875 mm, in its table.

Nominal thickness

The thickness named on the order, such as 1.5 mm. Real sheet varies within a tolerance set by the product standard.

STANDARDS AND SOURCES

- 15 U.S.C. section 206, standard gauge for sheet and plate iron and steel (US statute, 3 March 1893): the full table with decimal inches and mm was read.
- BS 3737:1964 (sheet, strip and wire sizes) and BS 6722:1986 (dimensions of metallic materials): BSI listings: both withdrawn (BS 6722 on 31 October 2014); texts not read.
- Euro Inox: Building Series Vol. 1, Guide to Stainless Steel Finishes (3rd ed. 2005); Vol. 2, Stainless Steel Facades (2nd ed. 2002); Vol. 5, Tables of Technical Properties (2nd ed. 2007, density by grade)
- Metal Construction Association, oil canning in metal roof and wall systems; and thickness tolerance standards such as EN 10051 and EN 10029 (named, not read)

Full guide: https://makebespoke.com/trade/technical/sheet-metal-thickness-and-gauge-conversion. 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.