

## TECHNICAL GUIDE • QUICK REFERENCE

# Steel Plate and Flat Bar Weight Tables

Steel plate weighs 7.85 kg per square metre for every millimetre of thickness, so 10mm plate is 78.5 kg/m<sup>2</sup>. Flat bar weighs width × thickness × 0.00785 kg per metre (in mm), so 100 × 10 flat is 7.85 kg/m. These are nominal weights at 7,850 kg/m<sup>3</sup> and exclude rolling tolerances and coatings.

| THICKNESS (MM) | PLATE (KG/M <sup>2</sup> ) |
|----------------|----------------------------|
| 3              | 23.55                      |
| 4              | 31.4                       |
| 5              | 39.25                      |
| 6              | 47.1                       |
| 8              | 62.8                       |
| 10             | 78.5                       |
| 12             | 94.2                       |
| 15             | 117.75                     |
| 20             | 157                        |
| 25             | 196.25                     |
| 30             | 235.5                      |
| 40             | 314                        |
| 50             | 392.5                      |

## Flat bar weight (kg/m)

Width down the side, thickness across the top, both in mm.

| WIDTH | 5MM  | 6MM  | 8MM   | 10MM  | 12MM  | 15MM  | 20MM  | 25MM  |
|-------|------|------|-------|-------|-------|-------|-------|-------|
| 25    | 0.98 | 1.18 | 1.57  | 1.96  | 2.35  | 2.94  | 3.92  | 4.91  |
| 30    | 1.18 | 1.41 | 1.88  | 2.35  | 2.83  | 3.53  | 4.71  | 5.89  |
| 40    | 1.57 | 1.88 | 2.51  | 3.14  | 3.77  | 4.71  | 6.28  | 7.85  |
| 50    | 1.96 | 2.35 | 3.14  | 3.92  | 4.71  | 5.89  | 7.85  | 9.81  |
| 60    | 2.35 | 2.83 | 3.77  | 4.71  | 5.65  | 7.06  | 9.42  | 11.77 |
| 65    | 2.55 | 3.06 | 4.08  | 5.10  | 6.12  | 7.65  | 10.20 | 12.76 |
| 75    | 2.94 | 3.53 | 4.71  | 5.89  | 7.06  | 8.83  | 11.77 | 14.72 |
| 80    | 3.14 | 3.77 | 5.02  | 6.28  | 7.54  | 9.42  | 12.56 | 15.70 |
| 90    | 3.53 | 4.24 | 5.65  | 7.06  | 8.48  | 10.60 | 14.13 | 17.66 |
| 100   | 3.92 | 4.71 | 6.28  | 7.85  | 9.42  | 11.77 | 15.70 | 19.62 |
| 120   | 4.71 | 5.65 | 7.54  | 9.42  | 11.30 | 14.13 | 18.84 | 23.55 |
| 150   | 5.89 | 7.06 | 9.42  | 11.77 | 14.13 | 17.66 | 23.55 | 29.44 |
| 200   | 7.85 | 9.42 | 12.56 | 15.70 | 18.84 | 23.55 | 31.40 | 39.25 |

## Sheet gauges (SWG) to mm

| SWG | INCH  | MM    | STEEL KG/M <sup>2</sup> |
|-----|-------|-------|-------------------------|
| 8   | 0.160 | 4.064 | 31.90                   |
| 10  | 0.128 | 3.251 | 25.52                   |
| 11  | 0.116 | 2.946 | 23.13                   |
| 12  | 0.104 | 2.642 | 20.74                   |
| 13  | 0.092 | 2.337 | 18.35                   |
| 14  | 0.080 | 2.032 | 15.95                   |
| 16  | 0.064 | 1.626 | 12.76                   |
| 18  | 0.048 | 1.219 | 9.57                    |
| 20  | 0.036 | 0.914 | 7.17                    |
| 22  | 0.028 | 0.711 | 5.58                    |
| 24  | 0.022 | 0.559 | 4.39                    |

Imperial Standard Wire Gauge values. US and manufacturers' sheet gauges differ, so always confirm the thickness in mm.

## Common questions

### How do I calculate the weight of steel plate?

Multiply length × width × thickness (all in metres) by 7,850 kg/m<sup>3</sup>. In practice: thickness in mm × 7.85 gives kg per square metre. A 2,500 × 1,250 × 10mm sheet is 3.125 m<sup>2</sup> × 78.5 = 245.3 kg.

### How much does 100 × 10 flat bar weigh?

7.85 kg per metre: 100 × 10 × 0.00785. A 6m length weighs 47.1 kg.

### What thickness is 16 gauge steel?

On the Imperial Standard Wire Gauge (SWG), 16 gauge is 0.064 inch, which is 1.626mm. Other gauge systems give slightly different values, so order sheet by thickness in millimetres.

## Sources

- BS EN 1991-1-1 Annex A: density of steel 77–78.5 kN/m<sup>3</sup> (BSI); 7,850 kg/m<sup>3</sup> is the usual design density
- Standard wire gauge (Imperial Standard Wire Gauge, 1884): gauge to inch and mm values (Wikipedia) · [https://en.wikipedia.org/wiki/Standard\\_wire\\_gauge](https://en.wikipedia.org/wiki/Standard_wire_gauge)

Full guide: [www.koyda.com/guides/plate-and-flat-bar-weights/](http://www.koyda.com/guides/plate-and-flat-bar-weights/)

## Need plate or flat bar cut, drilled or fabricated? Send us your drawings.

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