



STEEL WEIGHT FORMULA CHEAT SHEET

Fast theoretical estimates for carbon steel - one page, no signup

IRON-METAL.NET

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CORE FORMULA

$$\text{Weight (kg)} = \text{Volume (m}^3\text{)} \times \text{Density (kg/m}^3\text{)}$$

Typical carbon steel density: 7850 kg/m³ (7.85 g/cm³)

Common formulas

Plate / sheet	$L(\text{m}) \times W(\text{m}) \times T(\text{mm}) \times 7.85$	kg
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Flat bar	$W(\text{mm}) \times T(\text{mm}) \times 0.00785$	kg/m
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Round bar / rebar	$D(\text{mm})^2 \times 0.006165$	kg/m
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Round tube	$(OD^2 - ID^2) \times 0.006165$	kg/m
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Square bar	$Side(\text{mm})^2 \times 0.00785$	kg/m
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Rectangular tube*	$[BH - (B-2t)(H-2t)] \times 0.00785$	kg/m
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*Sharp-corner approximation. For standard profiles, use catalog kg/m values.

Worked examples

01 10 mm plate

$$2 \text{ m} \times 1 \text{ m} \times 10 \text{ mm} \times 7.85 = 157 \text{ kg}$$

Volume method: 0.02 m³ x 7850 kg/m³.

02 20 mm round bar

$$20 \text{ squared} \times 0.006165 = 2.466 \text{ kg/m}$$

For 6 m: 2.466 x 6 = 14.80 kg.

03 IPE 200 from catalog

$$22.4 \text{ kg/m} \times 6 \text{ m} = 134.4 \text{ kg}$$

Use the applicable standard size and mill tolerance.

Use the right reference

Geometry formula: estimates simple shapes. Catalog kg/m: preferred for standard sections. Mill certificate: final procurement reference.



Scan for guide + calculators