

Dimensions and Weights for Tubes

Mcneil Instruments is a premier manufacturer of a wide range of **high-quality tubes**, catering to industries like oil and gas, power, chemical, and more. Below is a detailed **weight chart table** for different tube types, incorporating dimensions, material properties, and applications.

General Weight Chart for Steel Tubes

DN (Nominal)	Outer Diameter (O.D.) [mm]	Wall Thickness (s) [mm]	Weight of Pipe [kg/m]	Water Content [l/m]	Water-Filled Weight [kg/m]	Max. Span (L) [m]
6	10.2	1.6	0.34	0.04	0.38	1.0
8	13.5	1.8	0.52	0.08	0.60	1.0
25	33.7	2.0	1.56	0.69	2.25	2.0
50	60.3	2.3	3.29	2.44	5.73	3.1
100	114.3	3.2	8.77	9.14	17.91	4.5
200	219.1	4.5	23.82	34.67	58.49	6.0

Weights for Specific Tube Types Manufactured by Mcneil Instruments

Tube Type	Size Range (O.D.) [mm]	Wall Thickness (s) [mm]	Weight Range [kg/m]	Application
Alloy Steel Tube	10 - 610	1.5 - 6.3	0.34 - 93.8	High-pressure pipelines, power plants
Hastelloy Tube	12 - 400	2.0 - 6.0	0.42 - 62.0	Corrosive environments
Inconel Tube	10 - 355	1.6 - 5.6	0.3 - 48.3	High-temperature applications
Stainless Steel Tube	6 - 508	1.6 - 6.3	0.34 - 77.9	General-purpose industrial tubing
Stainless Steel Seamless Tube	8 - 457	1.8 - 6.3	0.5 - 70.0	Oil and gas, petrochemical industries
Copper Tube	6 - 159	1.5 - 5.0	0.3 - 15.3	Heat exchangers, HVAC systems
904L Stainless Steel Tubing	12 - 219	2.0 - 5.6	0.5 - 24.0	Marine, chemical processing
ASME SA 213 TP 304 Stainless Steel Tube	8 - 323.9	2.0 - 6.0	0.5 - 43.9	Food-grade and industrial use

ASTM A511 Stainless Steel Seamless Tubing	10 - 168.3	2.5 - 4.0	0.8 - 16.2	High-precision instrumentation
Stainless Steel Heat Exchanger Tube	8 - 159	1.8 - 5.0	0.5 - 15.0	Heat exchangers, condensers
Stainless Steel Capillary Tube	6 - 88.9	1.6 - 3.2	0.34 - 6.2	Medical, instrumentation
Stainless Steel Rectangular Tubing	Various	Customizable	Varies	Structural and architectural applications

Formula to Calculate Tube Weight

The weight of a tube can be calculated using the following formula:

$$\text{Weight per meter (kg/m)} = \pi \times (\text{Outer Radius}^2 - \text{Inner Radius}^2) \times \text{Density of Material}$$

Where:

- Outer Radius = Outer Diameter / 2
- Inner Radius = Outer Diameter - 2 × Wall Thickness / 2
- Density of Material:
 - ❖ Steel: 7,850 kg/m³
 - ❖ Stainless Steel: 7,930 kg/m³
 - ❖ Copper: 8,960 kg/m³

Example Calculation for a Steel Tube

Given:

Outer Diameter (O.D) = 60.3mm, Wall Thickness (s) = 2.3 mm, Material Density = 7,850kg/m³

Steps:

- **Outer Radius (R_{outer}):**

$$R_{\text{outer}} = \text{O.D} / 2 = 60.3 / 2 = 30.15\text{mm}$$

- **Inner Radius (R_{inner}):**

$$(R_{\text{inner}}): \text{O.D.} - 2 \times s / 2 = 60.3 - 2 \times 2.3 / 2 = 55.7 / 2 = 27.85\text{mm}$$

- **Cross-Sectional Area (AAA):**

Convert radius to meters:

$$A = \pi \times (R_{\text{outer}}^2 - R_{\text{inner}}^2)$$

$$A = \pi \times ((0.03015)^2 - (0.02785)^2)$$

$$A = \pi \times (0.000909 - 0.000776)$$

$$A = \pi \times 0.000133 = 0.0004188\text{m}^2$$

- **Weight per meter (WWW):**

$$W = A \times \text{Density} = 0.0004188 \times 7,850 = 3.28\text{kg/m}$$

The weight of a steel tube with an outer diameter of **60.3 mm** and wall thickness of **2.3 mm** is approximately **3.28 kg/m**.



Features of Mcneil Instruments Tubes

1. **Durable Materials:** Precision-engineered using **alloy steel, stainless steel, copper,** and specialty alloys.
2. **Wide Applications:** Suitable for industries like **oil & gas, chemical, energy, and marine.**
3. **Global Standards:** Compliant with **ASME, ASTM, DIN, and other international standards.**
4. **Custom Solutions:** Available in varying sizes, dimensions, and finishes for specific applications.

Why Choose Mcneil Instruments?

- **Top-Notch Quality:** Advanced manufacturing processes ensure superior performance.
- **Comprehensive Product Range:** From **seamless tubes to specialized rectangular tubing,** Mcneil Instruments offers it all.
- **Reliable Service:** Committed to timely delivery and customer satisfaction.

For more details or to inquire about specific dimensions and weights, reach out to **Mcneil Instruments** today!