

# GAUGE - MEASUREMENT

Gauge is a way of measuring or identifying the objects like not only metal sheets but also metal wires, insulated current carrying wires made up of different materials like Iron, Copper, Steel, Zinc, Gold, Silver and other.

Generally extremely thin foil is called foil or leaf. If the thickness of metals sheet is more than 6 mm (milli meters) , it is called Metal plate.

The thickness of Sheet metal is commonly specified by a traditional measurement known as its gauge. The large the gauge number, the thinner the metal. This means if the number of gauge increases, the thickness of sheet metal decreases.

**For example:**

Gauge of Steel	Thickness in inches	Thickness in mm
12	0.1046 inch (0.1046 <sup>''</sup> )	2.66 mm
24	0.0239 inch (0.0239 <sup>''</sup> )	0.61 mm

Here we have to know one thing that the gauge measurements are different for different sheet metals. This means Gauge of steel measurements are not used for Aluminium. The thickness of different metals for same gauges are given below.

**For example:**

Gauge	Iron	Steel	Zinc steel	Stainless steel	Aluminium
12	2.78 mm	2.66 mm	2.75 mm	2.78 mm	2.05 mm
24	0.64 mm	0.61 mm	0.70 mm	0.64 mm	0.51 mm

Also, not only gauge is used for measuring the thickness of sheet metals but also it is used for measuring the diameters (thickness) Of wires. The thickness of gauge of same metal for sheet and wire are different. Generally if the gauge increases, the size of diameter / thickness decreases.

**For example:**

Gauge	Stainless Steel wire / Rod	Stainless steel Sheet	Gold strings
12	2.64 mm	2.78 mm	2.01 mm
24	0.56 mm	0.64 mm	< 0.40 mm

The thickness for various gauges of insulated copper wires for maximum safe current are given below. These are by the National electric code of USA. The thickness measured in mils' units.

$$1 \text{ mil} = 10^{-3} \text{ inch} = 0.001 \text{ inch}$$

Gauge	4	6	8	10	12	14	16	18
Thickness (in mils)	204	162	129	102	81	64	51	40

More over there are different gauge systems for measuring gauges of same measurements. SWG = Standard Wire Gauge, AWG = American Wire Gauge, BWG = Birmingham Wire Gauge and so on.....

**NAGA MURTHY - 9441786635**  
 Contact at : [nagamurthysir@gmail.com](mailto:nagamurthysir@gmail.com)  
 Visit at : [nagamurthy.weebly.com](http://nagamurthy.weebly.com)